

Resilient ORGANISATIONS

A collaboration between research & industry

Bay of Plenty Lifelines Group Resilience Benchmark Report

Resilient Organisations Research Report 2014/06
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About the Resilient Organisations Research Programme

“Building more resilient organisations, able to survive and thrive in a world of uncertainty, through research and practice”

Organisations today need to navigate increasingly complex and challenging environments. Resilient organisations are those that are able to not only survive, but thrive in this world of uncertainty. Resilience integrates the concepts of Risk, Crisis Management, Business Continuity Planning, and Organisational Leadership to provide a platform for developing more robust and agile organisations.

Who we are:

The Resilient Organisations (ResOrgs) is a multi-disciplinary team of researchers and practitioners. We are proudly New Zealand based with global reach. ResOrgs is a collaboration between top New Zealand research Universities, particularly the University of Canterbury and University of Auckland, funded by the Natural Hazards Research Platform and supported by a diverse group of industry partners and advisors. The research group represents a synthesis of engineering disciplines and experts in management, organisational psychology and sociology and business leadership. Our work is aimed at transforming organisations so they can successfully survive major disruptions, avoid chronic dysfunction, build robust partnerships, and prosper.

We are committed to making organisations more resilient in the face of hazards in the natural, built, and economic environments. Resilient organisations are able to rebound from adversity and find opportunities in times of distress. They are better employers, contribute to community resilience, and foster a culture of self-reliance and effective collaboration.

What we do:

ResOrgs delivers a programme of public-good research with significant impacts on policy and practice. The group, in existence since 2004, contributes to the global resilience conversation through regular speaking engagements, open-source resources and peer-reviewed academic articles. Resilient Organisations researchers are working directly with businesses, industry groups, and policy makers to effect real change. Resilient Organisations has been actively involved in supporting the city of Christchurch (NZ) in its journey to become more resilient following its earthquakes, supporting their successful bid to become a member of the Rockefeller Foundation’s 100 Resilient Cities Challenge. ResOrgs also has a growing number of productive collaborative relationships across Asia, Australia, Canada, the US, and the UK.

Activities and outputs of the group inform and focus debate in areas such as emergency management, post-disaster recovery, reconstruction following disasters, and the resilience of critical infrastructure sectors. We have developed a unique set of tools for resilience assessment, capability building, and benchmarking, including the Resilience Benchmark Tool (<http://brt.resorgs.org.nz/>). We also produce practical frameworks and guides to help organisations develop and implement resilience strategies suitable to their environment.

Why we do it:

In an increasingly volatile and uncertain world, one of the greatest assets an organisation can have is the agility to survive unexpected crisis, to find opportunity, and thrive in the face of potentially terminal events. We believe such resilience makes the most of the human capital that characterises the modern organisation and offers one of the greatest prospects for differentiating the successful organisation on the world stage. This resilience is typified by world class organisational culture and leadership, strong and diverse networks that can be drawn on for support when needed, and an attitude and strategic positioning that is change-ready. More resilient organisations lead to more resilient communities and provide the honed human capital to address some of our most intractable societal challenges. For more information see our website: www.resorgs.org.nz.

Bay of Plenty Lifelines Group Resilience Benchmark Report

Executive summary

“Resilience: The ability to survive a crisis and thrive in a world of uncertainty”

Resilience is important for any organisation, but where the organisation provides a critical lifeline service to the community, the importance of continuity of service is even more crucial. The Bay of Plenty Lifelines Group (BOPLG) is made up of utilities providing critical infrastructure to support the Bay of Plenty region.

There has been considerable effort over many years within lifeline groups across New Zealand to improve the resilience of critical infrastructure assets and networks. Under the Civil Defence and Emergency Management Act 2002, each lifeline utility is required to restore services to the fullest possible extent, during and after an emergency. To enable this, utility authorities are also required to participate in emergency management planning. The BOPLG identified a gap, in that there has traditionally been less focus on the resilience of the organisations that own, operate and maintain that infrastructure.

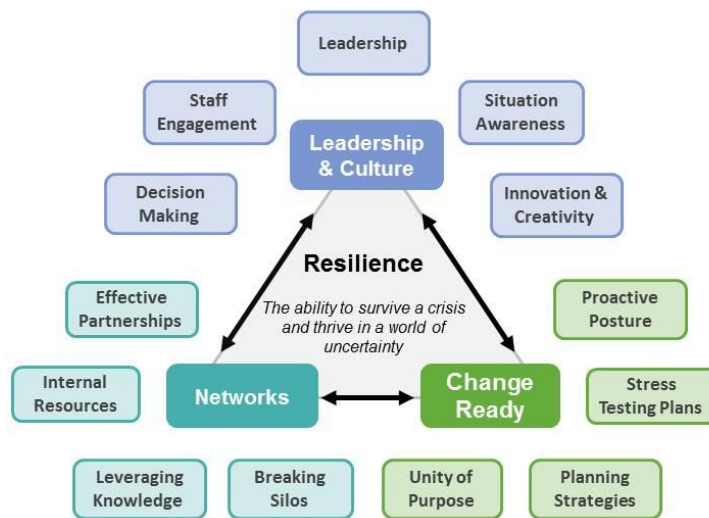
New Zealand’s Resilient Organisations research programme (www.resorgs.org.nz) is leading the world in research to understand what enables some organisations to rise to the challenges presented by crises, while others fail. Resilient Organisations have identified thirteen indicators of resilience and developed a tool for benchmarking organisations across these indicators. BOPLG saw an opportunity to use the Resilience Benchmarking Tool developed by Resilient Organisations to engage its members in a project to collectively improve the resilience of their organisations. This report summarises the findings from that project.

APPROACH

The Benchmark Resilience Tool was developed and tested by Resilient Organisations (Lee, Vargo, & Seville, 2013). The tool is based around thirteen indicators of organisational resilience, grouped into three attributes, as shown in the following figure. The attributes and indicators are the key areas used to assess the resilience of an organisation.

In the Benchmark Resilience Tool, a series of statements are included for each indicator. Respondents are asked to indicate how much they agree, or disagree, with the statement on a Likert scale (an eight point graduated scale ranging from strongly disagree to strongly agree). An important feature of the Benchmark Resilience Tool is that it is designed to be both answered by senior managers and staff across an organisation, so that an organisation-wide view of resilience can be obtained. In addition to the standard Benchmark Resilience Tool, a ‘Lifeline Specific Emergency Preparedness’ module was added to the survey for this project.

Resilience Indicators



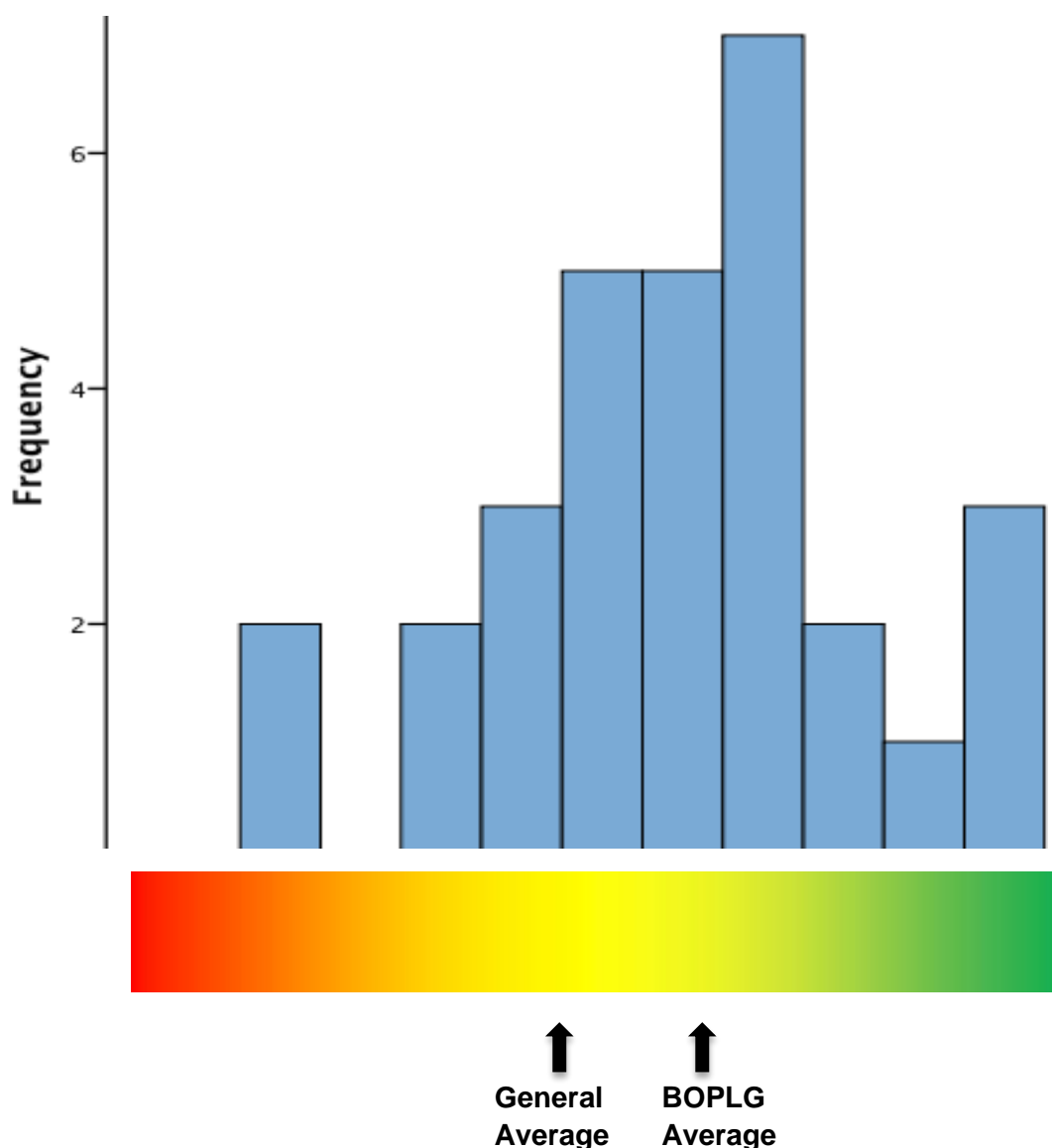
Organisational Resilience Attributes and Indicators (www.resorgs.org.nz)

Of the 32 organisations invited to participate in this project, 18 took part, representing a 56% response rate. Of those 18, six organisations were councils. Three of the councils divided themselves up into 'departments' and ran the survey separately for each department. In total 30 senior manager surveys were completed and a total of 189 staff answered the survey across the 18 participating organisations.

Each organisation that participated in this project has received a confidential Resilience Report, which identifies the resilience strengths and weaknesses for their organisation. The aim of this report is to provide an analysis of common resilience strengths and weaknesses across BOPLG members and to recommend how the Group, collectively, might go about improving overall resilience.

KEY FINDINGS

BOPLG organisations, on average, scored higher than other organisations in our database. There was, however, a very high spread in the results – some organisations showing excellent resilience and others showing very poor resilience. BOPLG organisations that participated in the survey can use the following figure and their individual resilience report to work out where they sit relative to other members of group.



Bay of Plenty Lifeline Group resilience compared to general organisational resilience. Blue bars represent the scores of the 30 organisational groups (or departments) that participated.

Overall, the greatest resilience strength within the Bay of Plenty Lifelines Group is **effective partnerships**. This is great news as these existing relationships can be used to collectively grow resilience: through sharing ideas and resources, collaborating on exercises and improving and expanding each other's networks with other organisations. Keep fostering these relationships during business-as-usual and don't be afraid to utilise them during a crisis.

The second strongest resilience indicator was **decision making**. This is another encouraging result. It is important for organisations to be able to make quick decisions in a crisis. Good decision-making is also valuable during business-as-usual.

Lifeline utilities have been developing their **planning strategies** for many years. This practice has clearly paid dividends as planning strategies is the third strongest resilience indicator for BOPLG.

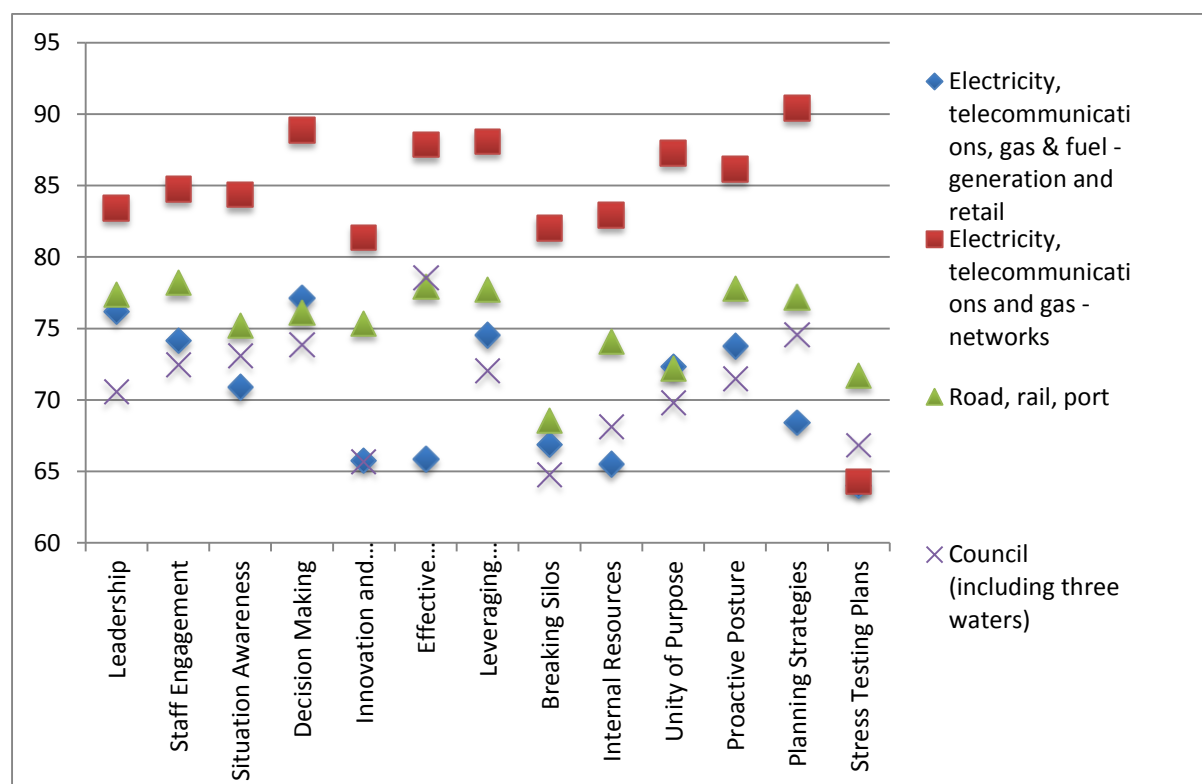
Despite the strong planning strategies, most organisations appeared to be least effective at **stress testing plans**. The frequency of testing plans is quite varied between organisations, and there are a notable number of organisations that do not test plans at all.

Improvement could also be made in terms of **breaking down silos** both within and between organisations. Silos can create communication barriers that limit creativity, which is particularly problematic when crises occur. It is important that silo mentality is minimised as much as possible.

To gain a better understanding of the data, the results were split into four different groups:

- Electricity, telecommunications, gas and fuel – generation and retail;
- Electricity, telecommunications and gas – networks;
- Road, rail and port; and
- Council (including three waters).

The most resilient group was the electricity, telecommunications and gas network providers. However, this group had a very high ratio of senior managers to staff responding to the survey, which has skewed the results (on average senior managers rated their resilience 16% higher than their staff did). When accounting for this effect, this group still came out with the highest level of resilience, but the spread in the scores was reduced.



Average resilience indicator scores for each utility group

Key findings for each utility group

Electricity, telecommunications, gas and fuel – generation and retail

- *This group showed strong leadership and this can be utilised to engage staff in resilience building exercises.*
- *Leveraging knowledge scored highly and this strength can be used to create improvements in the weaker areas of networking.*

Electricity, telecommunications, gas and fuel – networks

- *High resilience scores within this group, particularly in terms of planning.*
- *Low staff participation rates in the survey indicate that staff engagement could be improved and a culture of resilience needs to be propagated within these organisations.*
- *This group needs to use its strengths to support other members of the BOPLG, especially organisations responsible for roading and fuel, as this was identified as a high dependence area.*

Road, rail and port

- *Staff engagement and leadership were effective within this group and this is a real advantage for building resilience. Well-led and engaged staff will be willing to participate in resilience development activities.*
- *The networking attributes of effective partnerships and leveraging knowledge were also strong. Use this strength to engage partners to share resilience strategies.*
- *This group scored least well in terms of their Change Readiness. A collaborative effort with other utility groups (like electricity, telecommunications, fuel and gas utilities) that depend heavily on transportation networks is recommended to improve this.*

Council (including the three waters)

- *High scores in the Culture and Leadership attribute can be leveraged to promote resilience ideas throughout organisations as well as engagement in resilience development activities.*
- *Strong scores in the effective partnership and planning strategy indicators can be utilised in resilience building activities with other organisations. This encourages cross pollination of ideas and creative solution building*

Responses to the lifeline-specific module of questions indicated a high level of preparedness, however there were some notable areas in need of improvement:

- rapid impact assessment procedures
- staff understanding and training in emergency response, and
- service restoration hierarchies.

Lifeline interdependencies were tested – both in terms of likely level of disruption and degree of preparedness for disruption. There were noticeable differences in how the various utility types are impacted by lifeline disruptions. Electricity, telecommunications, gas and fuel generation and retail, council and road, rail and port are all mostly dependent on electricity, data and phones. Whereas the electricity, telecommunications, and gas network providers are most disrupted by road, fuel and data networks outages.

Organisations were asked how they rank their preparedness for lifeline disruption. Areas of concern are where there is a high level of dependency on a lifeline and low level of preparedness. Road, rail and port operators, as well as Councils all need to improve their planning for electricity, data and phone network disruption. Electricity, telecommunications and gas network providers need to plan better for road network disruption.

Generally, the reported top risks that could lead to a crisis were consistent across the utility groups. The top risks identified were:

- Loss of critical services
- Reputation damage
- Earthquake
- Severe weather
- Regulatory changes
- Flooding

In general, the results show that BOPLG organisations take staff engagement seriously with all but one indicating that they carry out staff engagement surveys. Results of staff satisfaction surveys are also very positive. BOPLG organisations also have reasonably low staff turnover rates.

Despite the good staff satisfaction ratings and low staff turnover, it is important to note that on average senior managers scored their organisational resilience 16% higher than other staff members. This disconnect is common within many organisations and can be detrimental from a resilience perspective as it can indicate a lack of communication and involvement of staff; it is important for organisations to consciously include staff in all resilience development initiatives.

RECOMMENDATIONS:

Across the organisations and utility groups within BOPLG there are a range of resilience strengths and weaknesses. This diversity is a real opportunity for inter-organisational learning and growth. BOPLG needs to develop ways of sharing and taking advantage of the collective knowledge of the group. Use the collective strengths of the group – effective partnerships, decision making and planning – to really address and enhance the group's weaknesses.

Create a BOPLG Resilience Action Plan

- *Focus on one resilience indicator each month. Set up an online forum where organisations can share what they do to improve that aspect of their resilience.*
- *Using the strengths identified in the resilience survey, select one champion organisation, or utility group, for each resilience indicator. Get them to put together a 1-2 page summary (to share with the group) of what they do to enhance that aspect of their resilience. For example, electricity, telecommunications and gas network providers could put together advice on how to successfully plan for crises.*

Organisations in BOPLG generally need to reduce their silo attitudes – both within and between their organisations. Silos are social, cultural and behavioural barriers that inhibit communication and effective working between people or teams within an organisation. The key to breaking down silos within and between organisations is to encourage communication and movement of people and ideas. This will not only help during crises but will also help with communication, knowledge sharing, creativity and innovative thinking during business-as-usual.

Break down those silos!

- *Arrange for employee exchanges – where employees spend, say, a week every six months at another organisation. This can also be done within an organisation, with staff working in other departments for a time.*
- *Prepare and circulate a bi-monthly newsletter summarising BOPLG activities. The newsletter could also include a profile of an organisation or department each issue. Make these newsletters available, not just to those attending BOPLG meeting, but also to staff of all the organisations. This will help to make staff understand their role within the wider context and get to know some of the organisations that they are connected to.*
- *When making working groups for BOPLG activities, ensure that all utility groups are represented, regardless of the nature of the topic. It is valuable to have people bring a different perspective to the table and they may learn things that they can take back to their own utility group.*

All utility groups would gain from improving their approach to stress testing plans. Stress testing plans is important to both ensure plans are adequate but also to make sure staff are practiced and ready to face a crisis when it occurs. Plans are not particularly valuable if staff do not know how to implement them, or worse, do not even know they exist! Wherever possible, plan testing or crisis exercises should involve as many staff as possible. They should also be engaging and fun to ensure fully committed and attentive participation.

A plan is nothing without practice!

- *Develop and run annual BOPLG-wide exercise scenarios based around the top risks identified in the survey: loss of critical services, reputation damage, earthquake, severe weather, regulatory changes, and flooding. Make sure the scenario tests out the lifeline dependencies highlighted in this report.*
- *Develop a series of small 15-30 minute crisis scenarios for the group to share. Choose one scenario each month for everyone to carry out with their respective organisations. Observations from the exercises can then be shared at BOPLG meetings.*
- *When running exercises, arrange for staff to swap roles. You could consider doing this between organisations as well. This will help to break down silos within and between organisations.*
- *Develop a BOP specific emergency training workshop for new staff of all organisations. A half-day workshop could be held twice a year for new staff from all organisations. This could be designed, through interactive scenario based training, to introduce new staff to the region, the hazards, the organisations involved and dependencies between the organisations. This will also help develop situation awareness and effective partnerships.*

Three quarters of the staff surveyed agreed that they had the ability to run 24/7 operations, however 10% of organisations did not appear to have a clear strategy for relocating after a crisis. Ideally lifeline utilities should have relocation sites already selected. Those organisations that do not have these arrangements in place should consider adding it to their plans.

Plan for the need to relocate

Individual organisations need to:

- *Prepare alternative sites locations / arrangements*
- *Prepare remote operation options (e.g. working from home)*
- *Prepare how phone and ICT requirements will be managed during relocation.*
- *Carry out hazard assessments on all current and possible alternative operation locations.*
- *Get your team together and put together a list of essential items / requirements for an emergency operation site. Have this ready in a crisis in case your relocations plans fall through!*

BOPLG should:

- *Set up a database that holds all alternative working arrangement information.*
- *Hold a workshop to discuss opportunities for site and resource sharing.*

BOPLG organisations should consider utilising their planning skills and reviewing their plans to ensure rapid impact assessment and service restoration hierarchies are in place. And they need to stress test their plans and staff so they know what and how to act in a crisis.

Develop rapid impact assessment protocols and service restoration hierarchies

Individual organisations need to:

- *Get teams together over lunch one week and brainstorm possible approaches to service restoration and rapid impact assessment.*
- *The following week, give your team a crisis scenario to test these approaches. Divide your team in groups and challenge them to see who can come up with the most effective restoration strategy.*
- *Following a crisis event, hold a team debrief and review existing emergency arrangements and see whether procedures need to be revised.*

BOPLG should:

- *Develop a project to develop a combined rapid impact assessment procedure. A process to collect and efficiently share impact information following a disaster event.*
- *Run through a group wide crisis scenario exercise where service restoration hierarchies can be tested for impact on other lifelines group members.*

Senior manager responses to most questions were significantly higher than staff responses. This highlights the need for senior managers to always do a 'reality check' on their assumptions. BOPLG senior managers need to improve communication with staff members around emergency preparedness. Senior managers need to actively seek and assess staff understanding of emergency preparedness and ensure that there is a consistent understanding across the organisation.

Get staff better engaged with emergency preparedness

Individual organisations could:

- *Observe staff actions during crisis exercises*
- *Ask staff what could be improved about current emergency plans*
- *Send out a digi-poll every Friday asking staff to vote on the most appropriate response to a short crisis scenario.*
- *Put a mini-quiz in the staff newsletter each month. Give a prize for the winner and explain the answer the following week.*

BOPLG could:

- *Include staff participation in as many BOPLG activities as possible. For example, use web-based forums to elicit staff ideas, video BOPLG meetings and make them available to all staff, involve staff in crisis exercises, circulate newsletters containing BOPLG activities, and BOPLG run new staff inductions.*

Keep exercises fun, engaging and regular! A bit of competition often encourages participation too!

BOPLG members need to take more time to consider the dependency between their services. For many utility groups there are low levels of preparedness for services that are critical to their operation. In particular, there is a need for enhanced preparedness for telecommunications, electricity and road disruptions. BOPLG should work together to develop strategies to minimize disruption due to lifeline service outages.

Target critical dependencies where there is insufficient planning

- *Develop a project that further investigates lifeline inter-dependencies, focusing on developing strategies for disruption to those lifeline services that are critical for operation, but where preparedness to cope with disruption is lacking.*

BOPLG have taken an important step in identifying organisational resilience as an essential growth area for the group. The most important thing for BOPLG to do from here is to keep the momentum going. Resilience is not static. It is a stock that can either erode or build over time; it requires constant care and attention. Use the support, encouragement and skills of the group to individually and collectively grow resilience.

Keep growing your resilience!

- *Make resilience growth a key strategic mission for BOPLG.*
- *Develop a plan of action. As a group, focus attention on putting at least two of the recommendations in this report into action.*
- *Challenge each organisation to initiate five different resilience growth activities within their organisation over the next year.*
- *Hold each other to account. Have a resilience 'brag-board' on the BOPLG website where members can briefly describe the latest resilience initiatives they have led.*
- *Encourage group members to go on to better understand and track their own resilience; by repeating use of the Benchmark Resilience Tool on an annual basis. For national organisations, consider undertaking using Benchmark Resilience Tool for your whole organisation.*
- *Consider a deeper analysis of individual organisations, or the group as a whole, through workshops or interviews and further data analysis.*
- *For the BOPLG, book in a repeat benchmark resilience project again in 2 years to see how much progress has been made.*

1 Introduction

Resilience is important for any organisation, but where the organisation provides a critical lifeline service to the community, the importance of continuity of service is even more crucial. The Bay of Plenty Lifelines Group (BOPLG) is made up of utilities providing critical infrastructure to support the Bay of Plenty region. This report summarises the findings of a project undertaken in 2014 to benchmark the resilience of their members.

Effective planning is an important dimension to organisational resilience, allowing the organisation to prepare effectively for those events that can be foreseen. However such planning is insufficient in the face of the many and varied events that cannot readily be foreseen and can undo the best of plans. For these unexpected and extreme events a high level of adaptability is also needed. The combination of effective planning and high adaptability lead to maximization of an organisation's resilience.

Resilience Defined

There are many definitions of resilience, but they all have key elements in common. They speak of surviving disruption and returning to a new equilibrium, often requiring some form of adaptation. The definition for Resilience used in this report is:

"The ability to survive a crisis and thrive in a world of uncertainty"

This definition is both deceptively simple and incredibly powerful. It speaks of both emergency (survive a crisis) and business as usual settings (thrive in a world of uncertainty), recognising the intimate connection between the two. It deals with both the risks faced (from an all-hazards perspective) and highlights the opportunities that often present themselves in times of significant change to find a 'silver lining'.

New Zealand's Resilient Organisations research programme (www.resorgs.org.nz) is leading the world in research to understand what enables some organisations to rise to the challenges presented by crises, while others fail. Resilient Organisations have identified thirteen indicators of resilience and developed a tool for benchmarking organisations across these indicators.

Lifeline legal responsibilities

Under the Civil Defence and Emergency Management Act 2002, each lifeline utility has a responsibility to "ensure that it is able to function to the fullest possible extent, even though this may be at a reduced level, during and after an emergency". To enable this, lifeline utilities need to not only build and maintain infrastructure that can withstand hazards but they also need to build the capacity of their organisation to cope with crises.

The project

The Bay of Plenty Lifelines Group (BOPLG) approached Resilient Organisations to undertake a regional organisational resilience benchmarking project in early 2014. There has been considerable effort over many years within lifeline groups across New Zealand to improve the resilience of critical infrastructure assets and networks. The BOPLG identified a gap, in that there has traditionally been less focus on the resilience of the organisations that own, operate and maintain that infrastructure. BOPLG saw an opportunity to use the Resilience Benchmarking Tool developed by Resilient

Organisations to engage its members in a project to collectively improve the resilience of their organisations.

Each organisation that participated in this project has received a confidential Resilience Report, which identifies the resilience strengths and weaknesses for their organisation. The aim of this report is to provide an analysis of common resilience strengths and weaknesses across BOPLG members and to recommend how the Group, collectively, might go about improving overall resilience. This report also summarises findings from additional Lifelines-specific questions that were added to the Benchmark Resilience Tool for this project. Please note that results of individual organisations are confidential and are therefore not presented – this regional report provides analysis of aggregated results only. Instead, high level ‘utility type’ analysis is incorporated in the regional report where sufficient numbers of organisations participated. Utility types where less than 3 organisations participated were aggregated with other similar types to protect confidentiality of individual organisation results.

The first section of this report summarises the Benchmark Resilience Tool and survey process used in this study. Next these survey results are presented, specifically concentrating on overall resilience scores, utility specific resilience scores, lifeline specific question responses, top crises, and staff / human resources data. The report concludes with a summary of the Group’s strengths and opportunities for improvement, along with recommendations.

2 Survey

2.1 Outline

The Benchmark Resilience Tool was developed and tested by Resilient Organisations (Lee et al., 2013). The tool is based around thirteen indicators of resilience, grouped into three attributes, as shown in Figure 1. The attributes and indicators are the key areas used to assess the resilience of an organisation. In the Benchmark Resilience Tool, a series of statements are included for each indicator. Respondents are asked to indicate how much they agree, or disagree, with the statement on a Likert scale (an eight point graduated scale ranging from strongly disagree to strongly agree). As well as information on the indicators, some general demographic and business information (financials, staff satisfaction surveys etc) is also gathered in the survey. Another important feature of the Benchmark Resilience Tool is that it is designed to be both answered by senior managers and staff across an organisation, so that an organisation-wide view of resilience can be obtained.

Resilience Indicators



Figure 1 Organisational Resilience Attributes and Indicators (www.resorgs.org.nz)

In addition to the standard Benchmark Resilience Tool, a ‘Lifeline Specific Emergency Preparedness’ module was added to the survey for this project. Six questions were developed following a comparison of the Ministry of Civil Defence and Emergency Management (MCDEM) Capability Assessment Tool with the standard Resilient Organisations Benchmark Resilience Tool. The six questions reflect some Lifeline specific activities that are neither explicitly nor implicitly included in the Resilient Organisations Benchmark Resilience Tool. Part of the reason for adding these questions was to develop some consistency between a resilience project being run by the Auckland Lifelines Group (using the MCDEM tool) and this project in Bay of Plenty. The questions were:

To what extent do you agree or disagree with the following statements for your organisation?¹

- 1. We actively participate in CDEM coordination and emergency planning.*
- 2. Staff understand their role in an emergency and have undergone emergency response training.*
- 3. We have a clear rapid impact assessment procedure in place.*
- 4. We have the ability, processes and facilities to respond to a 24/7 emergency operation.*
- 5. We have a clear process for coordinating with CDEM during an emergency.*
- 6. We have a clear service restoration hierarchy, including restoration policies that enable continuance of supply to CDEM critical facilities.*

¹ Response options range from strongly agree to strongly disagree on an eight point Likert scale – as per the resilience indicator questions in the rest of the survey.

A copy of the full survey questions used in this project is included in Appendix A.

For this project, the Resilient Organisations Benchmark Resilience Tool was administered as an online survey. A survey web-link, with an access code, was sent to all Bay of Plenty Lifelines Group 'key contacts' (as supplied by Steve Campbell on 13 June 2014). Each organisation was asked to select one senior manager to lead the survey. If the organisation was a Council, they were encouraged to divide their organisation into departments that represented utilities (namely three waters, transport and rest-of-council) and a senior manager appointed to lead each department survey. As this was a regional project, respondents of national organisations were asked to consider their organisation at a regional level.

Once the senior manager had completed the survey, an email was automatically sent to them with a web-link to their staff survey. The senior manager was asked to send this to all staff they wanted to complete the survey. Once a specified number of staff had completed the survey, the survey was closed automatically. A resilience report was then automatically generated for each organisation summarising the organisation's resilience strengths and weaknesses, as well as a suggested action plan for improving that organisation's resilience.

A survey pilot was launched on 26 May 2014 to ensure there were no major faults in the tool and survey process prior to going to the rest of the BOPLG. The survey pilot revealed no major faults so the survey was deployed by email link to the rest of the BOPLG on 16 and 17 June 2014. Weekly email reminders were sent to senior managers by Resilient Organisations. The Bay of Plenty Lifelines group also carried out follow-ups with participants. The survey was closed on 24 July 2014, and all organisations were sent their confidential resilience reports by 31 July 2014.

2.2 Participation

32 organisations were invited to participate in the survey. Of these, 18 organisations participated giving a response rate of 56%, which is an excellent response rate for a survey of this kind. Of those 18, six organisations were councils. Three of the councils divided themselves up into 'departments' and ran the survey separately for each department. In total 30 senior manager surveys were completed.

To preserve confidentiality of results for individual organisations, responses have been grouped into four utility groups for data analysis and results processing:

- Electricity, telecommunications, gas and fuel – generation and retail;
- Electricity, telecommunications and gas – networks;
- Road (including Council transport departments), rail and port; and
- Council (including three waters).

The above groups were selected based on the type of lifeline and service they provided and in a way that ensured three or more organisations were in each category. If particular lifeline groups would prefer some additional, more in-depth, analysis and agree to share results with each other, a further, more refined analysis could be carried out.

Survey participation is summarised in Table 1.

Table 1 Bay of Plenty Lifelines Group Benchmark Resilience Survey, participation rates

	Number of senior manager surveys	Total number survey responses
Total number of individual organisations	18	189
Total number of senior manager surveys*	30	
Survey response by utility type		
Electricity, telecommunications, gas and fuel – generation and retail	5	49
Electricity, telecommunications, and gas - networks	4	7
Road, rail, port	4	32
Council	17	101
* The total number of senior manager surveys is greater than the number of organisations because several councils divided into different departments for the survey.		

Note that for the remainder of the report, when referring to ‘organisation’ scores, this refers to the 30 different senior manager initiated surveys.

3 Findings

3.1 Overall resilience

Bay of Plenty Lifeline Group (BOPLG) organisations show higher resilience than other organisations in our database. On the automated individual organisation resilience reports, the overall resilience of the organisation was indicated on a continuum from ‘Poor Resilience’ (red colour) to ‘Good Resilience’ (green colour). As shown in Figure 2, BOPLG organisations, on average, scored higher than other organisations in our database. There was, however, a very high spread in the results – some organisations showing excellent resilience and others showing very poor resilience. BOPLG organisations that participated in the survey can use Figure 2 and their individual resilience report to work out where they sit relative to other members of group.

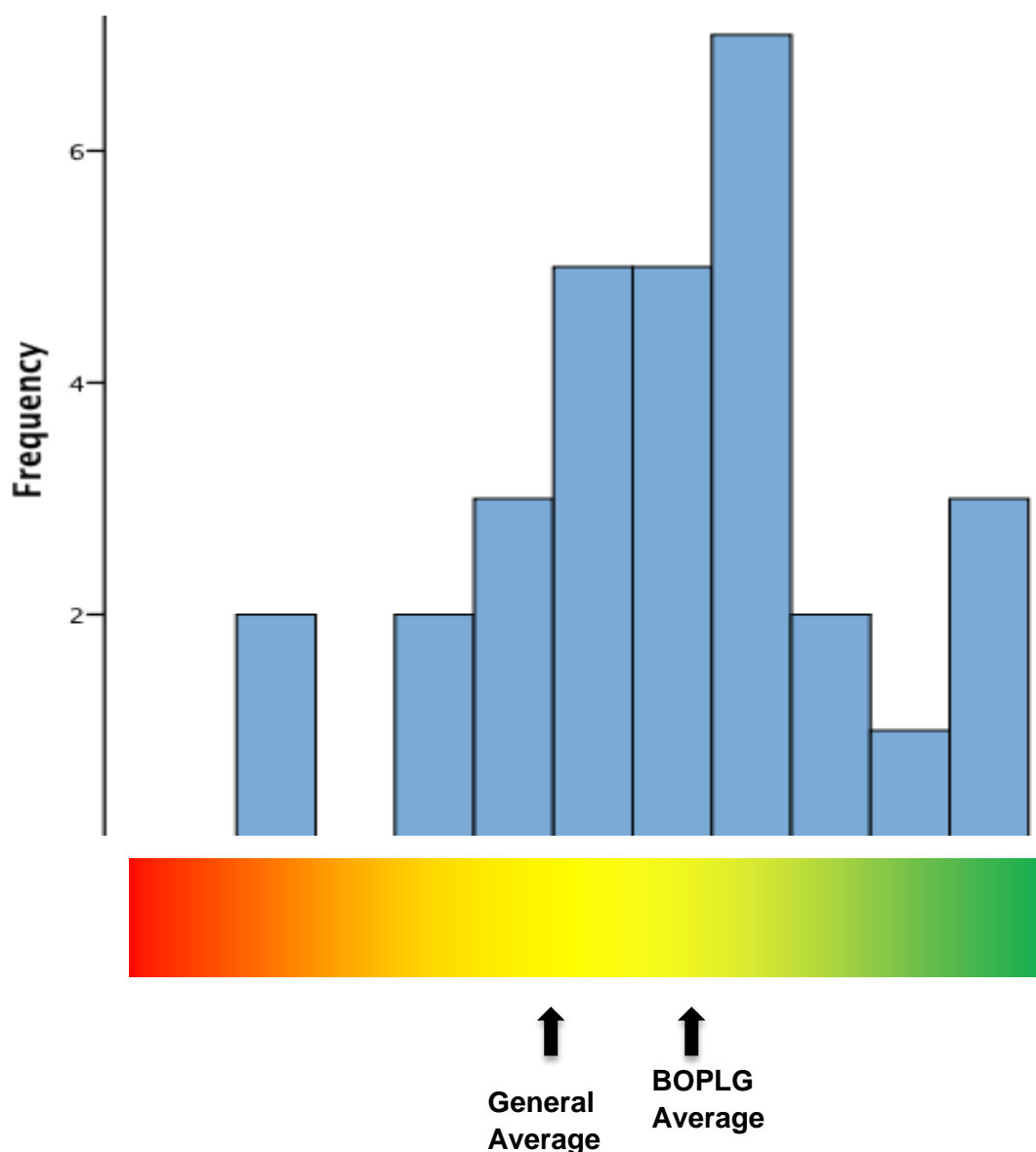


Figure 2 Bay of Plenty Lifeline Group resilience compared to general organisational resilience. Blue bars represent the scores of the 30 organisational groups (or departments) that participated.

Figure 3 shows the average score achieved across all participating organisations for each of the 13 resilience indicators. Overall, the strongest resilience indicators were:

1. Effective Partnerships
2. Decision Making
3. Planning Strategies

The weakest indicators were:

1. Stress testing plans
2. Breaking silos
3. Innovation and creativity

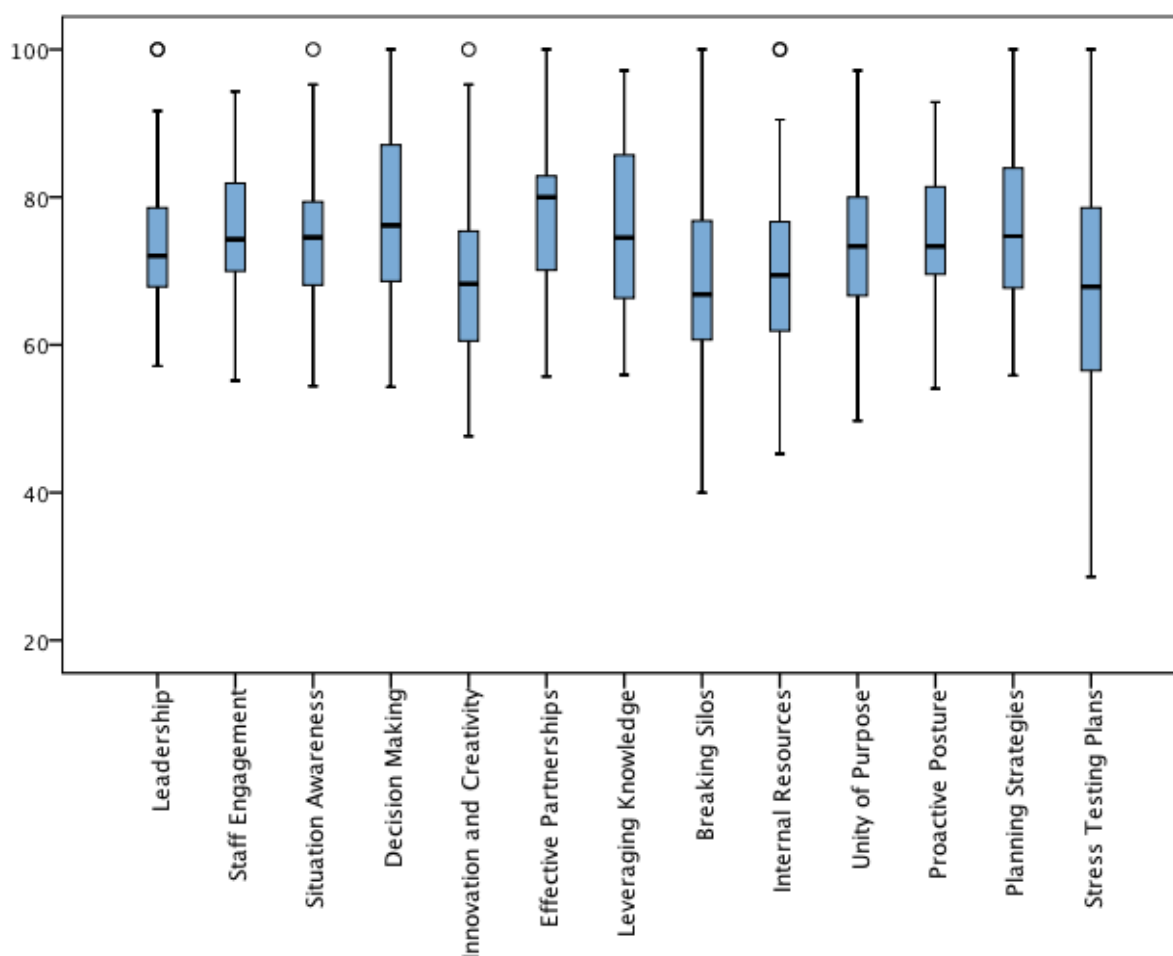


Figure 3 Resilience indicator scores for BOPLG organisations. The boxes represent the range of scores between the upper quartile (75%) and lower quartile (25%) of responses. The line in the middle of the box represents the median value. The lines represent the range of scores above and below the upper and lower quartile. Circles outside the boxes are outliers (outside expected normal range).

3.2 Utility comparison

Within the BOPLG there are several different utility groups (as described in Section 2.2). Because of the different nature of the organisations within each utility type it is valuable to look at the results for each group separately. Figure 4 shows the overall resilience scores for each utility group. In order of most to least resilient, the utility groups ranked:

1. Electricity, telecommunications and gas network providers;
2. Road, port and rail;
3. Electricity, telecommunications, gas and fuel generation and retailers; and
4. Council (including three waters).

It is important to note that the electricity, telecommunications and gas network providers only had 7 responses and had the highest percentage of senior managers responding. Having a high percentage of senior managers responding can have a noticeable impact on resilience scores – in this study senior managers rated their resilience an average of 16% higher than the rest of the staff.

To determine the effect of this, the responses from senior managers only were assessed. The results are shown in Figure 5. By only considering senior managers, the spread of results decreased within each utility group (generally the lower scores disappeared), the difference between utility group scores reduced, and the rank order of the utility groups changed slightly: electricity, telecommunications, gas and fuel generation and retailers now ranking second, above road, port and rail. Electricity, telecommunications and gas network providers still rank first. This indicates that for all utilities groups, senior managers ranked resilience higher than their staff. The difference in views is especially significant for the electricity, telecommunications generation and retailers group.

As organisational resilience is a function of not just senior manager views but also staff perspectives, the remainder of the analysis will be based around aggregated results for organisations.

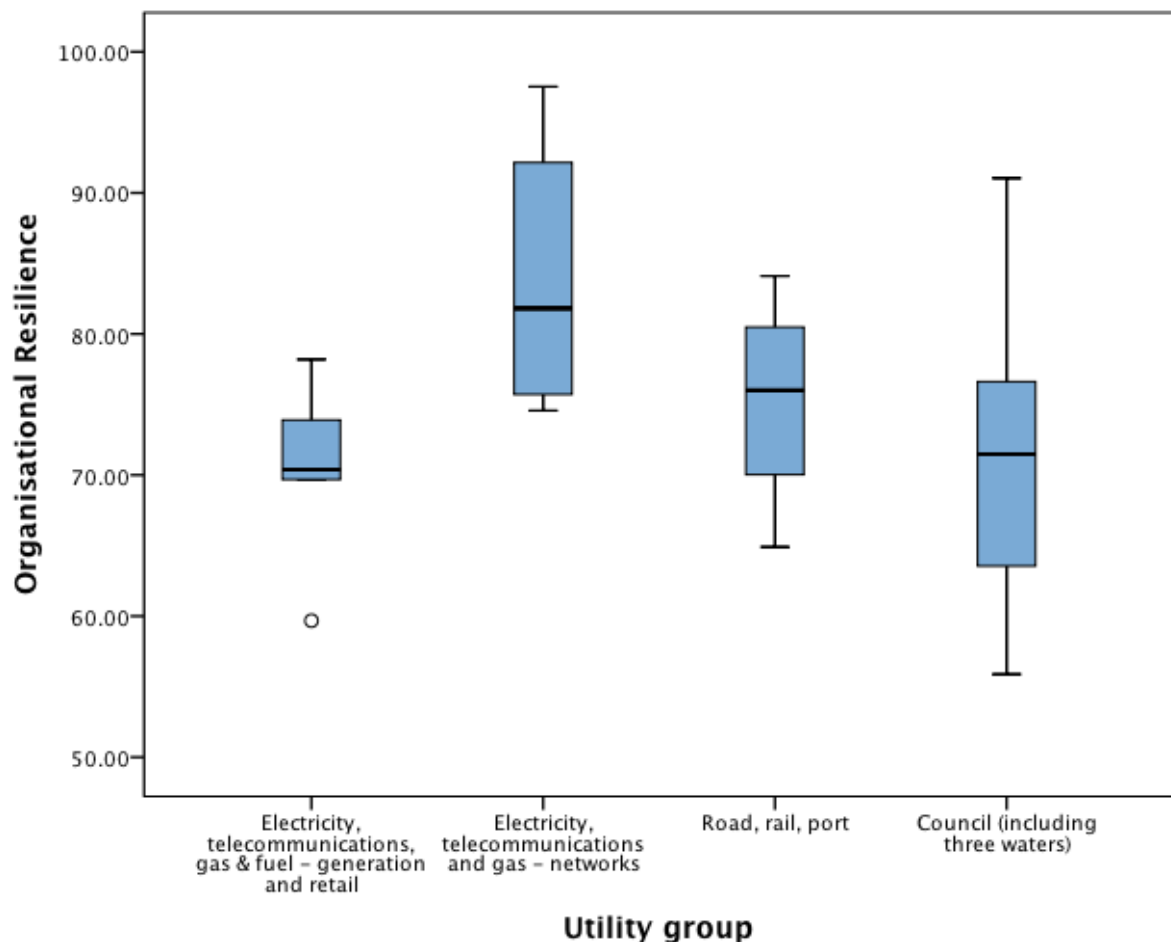


Figure 4 Overall resilience of different utility groups within BOPLG. The boxes represent the range of scores between the upper quartile (75%) and lower quartile (25%) of responses. The line in the middle of the box represents the median value. The lines represent the range of scores above and below the upper and lower quartile. Circles outside the boxes are outliers (outside expected normal range).

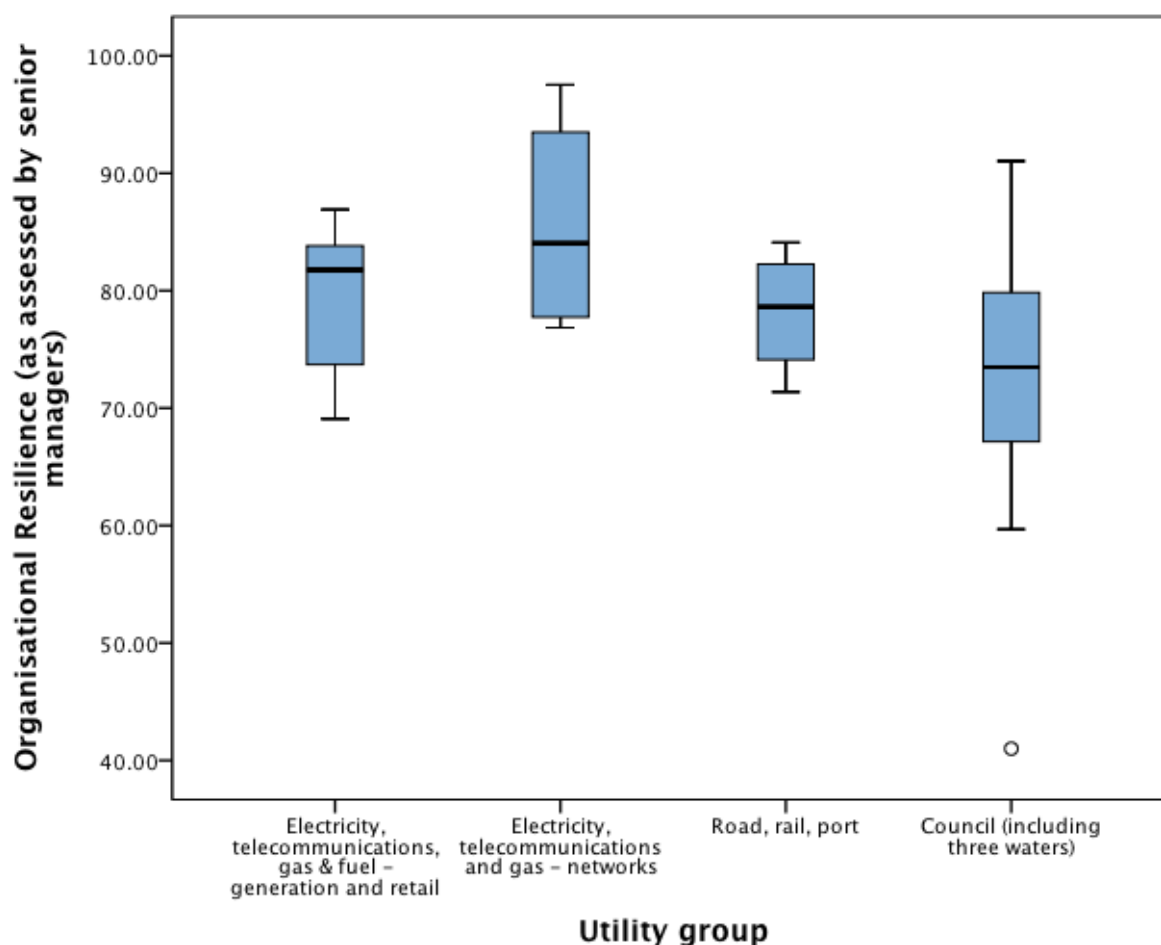


Figure 5 Overall resilience of different utility groups, as assessed by senior managers only, within BOPLG. The boxes represent the range of scores between the upper quartile (75%) and lower quartile (25%) of responses. The line in the middle of the box represents the median value. The lines represent the range of scores above and below the upper and lower quartile. Circles outside the boxes are outliers (outside expected normal range).

As well as looking at the overall resilience score, it is important to look at the resilience attributes and indicators to determine, within each utility group, where the strengths and weaknesses are. In Figure 6 and Figure 7, each utility group is represented by a different shape marker. The markers represent the average score within each attribute and indicator respectively. The strongest and weakest indicators for each utility group are summarised Table 2.

Overall, it is evident that the electricity, telecommunications and gas network providers show the strongest resilience. Their main strength lies in maintaining good internal and external relationships and networks, as well as a particular strength in decision making. For the other three utility groups, overall their strongest resilience attribute is in their organisational leadership and culture. At an indicator level, for electricity, telecommunications, gas and fuel generation and retailers, their strongest indicator is planning strategies, and for road, rail and port utilities it is in staff engagement. Council's strongest indicator is effective partnerships.

There is some commonality between the weakest indicators – for electricity, telecommunications, gas and fuel utilities, stress testing plans is an area requiring future improvement. For council, road, rail and port utilities, more attention to breaking down silos would be beneficial.

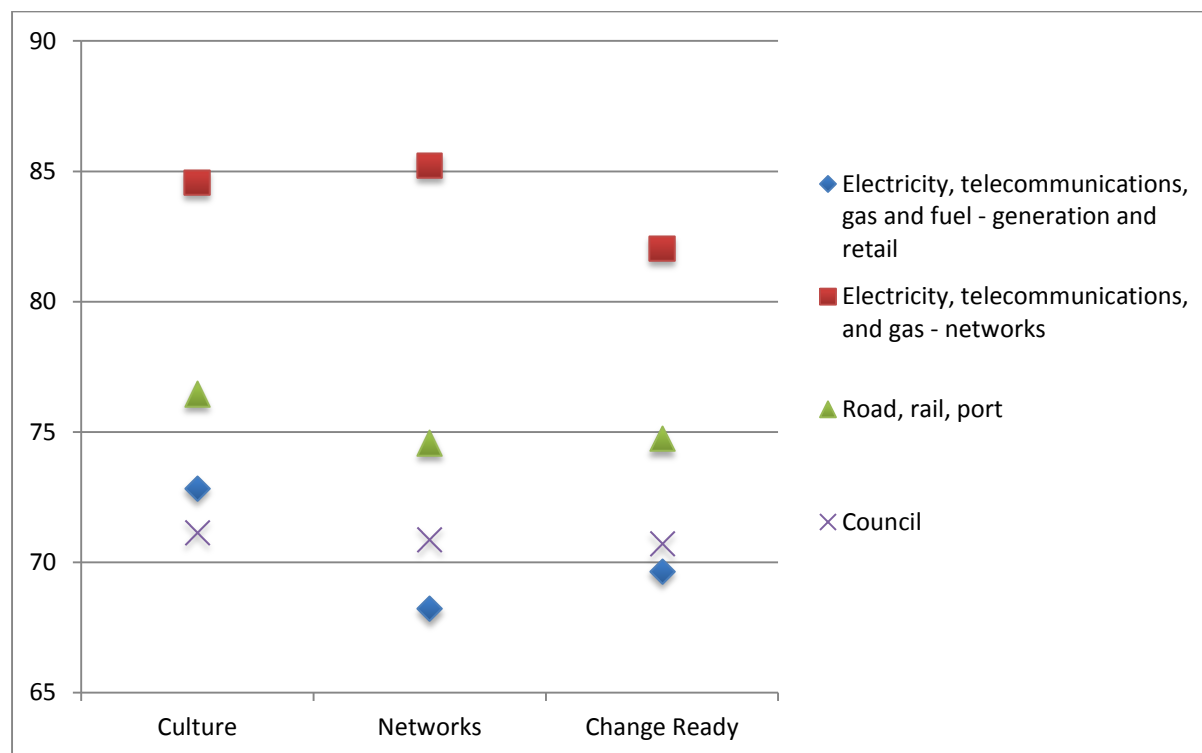


Figure 6 Average resilience attribute scores for each utility group

Table 2 Strongest and weakest resilience indicators for each utility group

Utility group	Strongest indicator	Weakest indicator
Electricity, telecommunications, gas & fuel - generation and retail	Decision making	Stress testing plans
Electricity, telecommunications and gas - networks	Planning strategies	Stress testing plans
Road, rail, port	Staff engagement	Breaking silos
Council (including three waters)	Effective partnerships	Breaking silos

Bay of Plenty Lifelines Group Resilience Benchmark Report

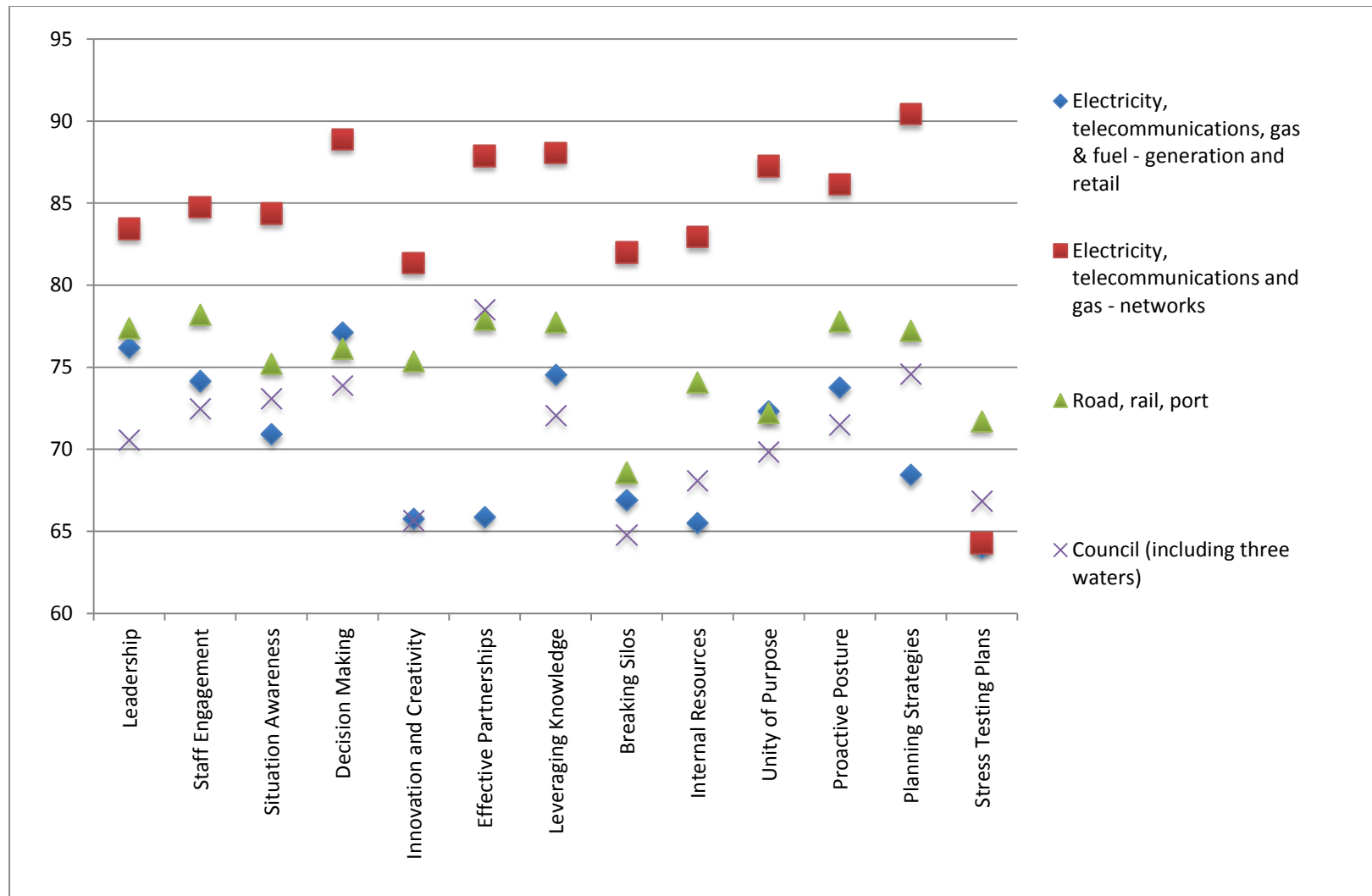


Figure 7 Average resilience indicator scores for each utility group

3.3 Lifeline CDEM responsibility

Lifeline utilities have a number of specific responsibilities. As described in Section 2.1, six questions were added to the Benchmark Resilience Survey, for all staff to answer, to measure some of the specific preparedness measures required of lifeline utilities. The mean responses (% agreement with the statement) are shown in Table 3. The responses are split into responses by senior managers and responses by staff. The areas that appear to need the most improvement are 1) rapid impact assessment procedures and 2) staff understanding and training in emergency response.

It is important to note the difference between the responses of the senior managers and the staff. For all questions, senior managers showed a higher agreement with the statements than staff. This represents a potential disconnect between senior manager and staff understanding of staff skills and knowledge within the company. There was a particularly high discrepancy between staff and senior manager responses regarding capabilities to run a 24/7 operation and staff understanding of their roles during and emergency. This indicates a poor understanding of emergency operation procedures.

Table 3 Responses to lifeline specific questions

	Mean response overall*	Mean response of senior managers*	Mean response of all other staff*	Difference between senior manager and staff
We actively participate in CDEM coordination and emergency planning.	79%	87%	78%	11%
Staff understand their role in an emergency and have undergone emergency response training.	69%	82%	67%	15%
We have a clear rapid impact assessment procedure in place.	66%	76%	64%	12%
We have the ability, processes and facilities to respond to a 24/7 emergency operation.	75%	89%	72%	17%
We have a clear process for coordinating with CDEM during an emergency.	79%	88%	76%	12%
We have a clear service restoration hierarchy, including restoration policies that enable continuance of supply to CDEM critical facilities.	71%	71%	71%	0%
*The scale used in this table is 100% strongly agree, 0% strongly disagree.				

Another important consideration for lifeline utilities is their ability or preparedness to relocate quickly if their premises are damaged. To determine how prepared BOPLG members are for relocation, senior managers were asked to select a description that best described how easy it is to relocate. The responses are summarised in Table 4. Almost half of the responding organisations have multiple sites that they can operate from. A total of 10% of respondents noted that it would be difficult to move from their primary location for health and safety, equipment or location reasons, which poses a risk if the primary site is damaged or inaccessible. One organisation noted under 'other' that they already have existing emergency operation provisions in place.

Table 4 Feasibility of relocation (senior managers only)

Relocation statement	Percent agreeing with statement
The majority of my staff can work from home	10%
It is relatively easy for us to set up in a new location	20%
We have multiple sites we can operate from	47%
There are significant health/safety and regulation constraints affecting the locations we can operate from	3%
The equipment is difficult to source, relocate and replace	3%
Our business is quite location specific, moving is not an option	3%
We could potentially site-share with another organisation	13%
Other	3%

3.4 Lifeline interdependence

Respondents were also asked about how long they could continue operating without normal supply of a given utility. Overall, as shown in Table 5, there is greatest immediate need (i.e. they could not function without these lifelines) for data networks, electricity (each 30%) and phone networks (24%). This indicates a very high level of dependency on these lifelines, which is concerning for lifeline organisations that have an immediate need to function and to restore their own services. In the short term (hours and days) there is also a need for water supply, sewage, road networks and food.

Table 5 Predicted ability to continue operation with different lifelines disruption (based on responses from all staff)

Lifeline Service that has been disrupted	Duration organisation can operate without lifeline service				
	Could not function	Hours	Days	Weeks	Months
Water supply	9%	29%	40%	14%	8%
Sewage	10%	34%	35%	11%	10%
Electricity	30%	26%	28%	11%	5%
Gas	5%	6%	13%	20%	56%
Phone networks	24%	32%	29%	9%	6%
Data networks	30%	28%	30%	7%	5%
Road networks	17%	19%	36%	19%	9%
Rail	1%	2%	10%	12%	75%
Airport	3%	2%	9%	15%	71%
Port	5%	1%	11%	15%	68%
Fuel	14%	15%	53%	11%	7%

It is interesting also to compare interdependency of these lifelines. So for each utility group, which is the most essential utility? The responses were scored from four (could not function without this service) to zero (could continue functioning for months without this service). The responses from individuals in each utility group were then averaged and ranked from least dependent to most dependent. The results are summarised in Table 6. The results show that there are noticeable differences in how the various utility types are impacted by lifeline disruptions. Electricity, telecommunications, gas and fuel generation and retail, council and road, rail and port are all mostly dependent on electricity, data and phones. Whereas the electricity, telecommunications, and gas network providers are most disrupted by road, fuel and data networks outages.

Table 6 Rank of lifeline dependency for each utility group (based on all survey responses)

	Rank of lifelines dependency by utility group*			
	Electricity, telecommunications, gas and fuel - generation and retail	Electricity, telecommunications, and gas - networks	Road, rail, port	Council (including three waters)
Water supply	6	5	7	5
Sewage	7	7	4	4
Electricity	1	6	1	3
Gas	8	11	8	8
Phone networks	3	4	3	2
Data networks	2	2	2	1
Road networks	4	1	5	7
Rail	11	10	11	11
Airport	10	8	9	10
Port	9	8	10	9
Fuel	5	2	5	6
<p>* 1 is most dependent, 11 is least dependent.</p> <p>Red is highest dependency (rank 1-3), Orange is moderate dependency (rank 4-6), Yellow is lowest dependency (rank 7-11)</p>				

Given the high levels of dependency discussed above, how well prepared are BOPLG organisations for disruption to these services? And where is there room for improvement? Organisations were asked how they rank their preparedness for lifeline disruption. Overall, organisations ranked their preparedness for lifeline disruption fairly evenly across all the lifelines – around 62% (where 100% is strongly agree or very well prepared). Electricity, telecommunications and gas network providers were on average more prepared for lifeline disruption (77%) than any other utility group.

Table 7 shows preparedness for disruption to each lifeline, ranked for each utility group. It is interesting to compare these rankings to the rankings in Table 6 – lifeline dependency. Concern should be raised when there is a high level of dependency on a lifeline (1, 2 or 3) and low level of preparedness (9, 10, 11). This indicates that more planning and mitigation is required.

Electricity, data and phone networks are likely to cause significant disruption to all utility operators. Table 7 shows that road, rail and port operators and councils have a low level of preparedness and need to improve planning for disruption to all these lifelines.

Electricity, telecommunications and gas network providers indicated a high dependency on road networks, yet a low level of preparedness for road network disruption. Thus, further preparedness is necessary.

Table 7 Rank of lifeline disruption preparedness for each utility group (based on all survey responses)

	Average preparedness *	Rank of lifelines disruption preparedness by utility group**			
		Electricity, telecos, gas and fuel - generation and retail	Electricity, telecos, and gas - networks	Road, rail, port	Council (including three waters)
Water supply	62%	9	11	7	1
Sewage	58%	11	9	11	3
Electricity	65%	1	6	8	4
Gas	64%	4	1	6	6
Phone networks	59%	5	2	10	9
Data networks	61%	2	2	9	10
Road networks	62%	8	9	1	8
Rail	61%	7	4	5	7
Airport	62%	6	4	3	5
Port	62%	9	7	2	2
Fuel	60%	3	8	4	11
Average preparedness	62%	62%	77%	53%	61%
<p>* The scale used in this table is 100% strongly agree, 0% strongly disagree.</p> <p>** 1 is most prepared, 11 is least prepared.</p> <p>Red is highest preparedness (rank 1-3), Orange is moderate preparedness (rank 4-6), Yellow is lowest preparedness (rank 7-11)</p>					

3.5 Planning

Having emergency, crisis and/or business continuity plans are an important component of crisis preparedness. BOPLG organisations appear to be very diligent with ensuring there are roles dedicated to crisis planning and that plans are prepared to deal with crises. This is also shown by their relatively high resilience scores in the Planning Strategies indicator (see Sections 3.1 and 3.2).

Table 8 summarises the types of roles and plans that BOPLG organisations have.

The results presented are the responses from senior managers only, because, in almost every organisation where both the senior manager and staff responded, there was an inconsistent response to these questions. This indicates that staff understanding of these roles and plans do not concur with senior managers. In fact, 5% and 13% of staff, respectively, indicated that they didn't know what crisis roles and types of plans the organisation had. This indicates that staff are perhaps not as involved in and aware of crisis / emergency planning as senior managers believe and this may lead to staff being less prepared for a crisis than expected.

Table 8 Organisation roles and plans (as indicated by senior managers)

	Yes, Our organisation has this Role	Yes, Our organisation has this Plan
Risk management	83%	N/A
Crisis management	60%	40%
Emergency management	100%	87%
Business continuity	63%	73%
None of these	0%	3%
Don't know	0%	7%

Generally respondents indicated that the plans they had were of sufficient quality (Table 9), however senior managers reported a markedly higher confidence in the quality of their plans than other staff.

Table 9 Sufficiency of crisis / emergency plans

Are plans of sufficient standard to be useful in an emergency?	Senior managers	Staff
Yes	82%	60%
Don't know	14%	22%
No	4%	6%

Despite scoring well in the Planning Strategies indicator, most organisations scored less well in the Stress Testing Plans indicator. As can be seen in Table 10, the frequency of testing plans is quite varied between organisations, and there are a notable number of organisations that do not test plans at all. Results are presented based on both senior manager and staff responses. In contrast to the varied understanding of the various roles and plans, the understanding of plan testing is much more consistent between managers and staff. This indicates that BOPLG are successfully including all staff in exercises to test plans, which is an important aspect of building staff engagement for resilience.

Table 10 Frequency of plan testing

Type of plan		Frequency of plan testing			
		Hardly ever	Every second year	Annually	Twice a year
Business Continuity	Senior manager	36%	14%	36%	14%
	Staff	36%	16%	28%	20%
Emergency Management	Senior manager	17%	9%	39%	35%
	Staff	19%	10%	40%	31%
Crisis Management	Senior manager	23%	0%	54%	23%
	Staff	28%	9%	38%	25%
Other	Senior manager	16%	17%	50%	17%
	Staff	29%	13%	46%	12%

3.6 Crises

All respondents were asked to identify the top five risks that could lead to a crisis for their organisation. The top crises identified by Bay of Plenty Lifelines Group members were:

- Loss of critical services
- Reputation damage
- Earthquake
- Severe weather
- Regulatory changes
- Flooding

Generally, these were the top crises for the four utility subgroups also. Other threats that were of concern, particularly to utility subgroups, were a major accident, staffing issues and financial crises. These results are summarised in Table 11. It is interesting to note that electricity, telecommunications

and gas network providers have the most consistent views (across all respondents) of what the top risks are (over 70% of staff chose each of the top four risks). This shows a consistent understanding of key risks across organisations and the utility group. The results may be skewed by the high percentage of senior managers that completed the survey within this group.

Six percent of respondents identified 'other' risks. These included: market volatility, travel mode changes, loss of accreditation, failure of internal services, market over supply, depopulation (loss of income through rates), local government reform, and health and safety incidents.

The survey also asked about recent crises the organisations had experienced. Several specific disruptive events were identified and are listed below. It is interesting to note that most of these recent events ranked in the top risk types identified above – indicating that the respondent's perception of risk may reflect recent and frequent crises:

- 2014 Easter weather event
- 2013 Wellington earthquake
- 2012 New Year Flooding
- 2012 Tongariro eruption
- 2011 Christchurch earthquake
- 2011 Maui gas line break
- 2011 Rena oil spill

As well as these larger events a number of other types of crises were faced by BOPLG organisations, including:

- infrastructure malfunctions
- landslides
- fire and cyber security training exercises
- fire at property
- fire at neighbouring property
- power cut
- neighbouring crime scene

BOPLG organisations reported surviving these recent crises well. As shown in Table 12, the crises generally did not overly challenge organisations. While this can indicate good preparedness, long periods of low disruption and challenge can lead to complacency and progressively lower levels of preparedness. Organisations noted the major challenges faced during these crises included repairing infrastructure damage, managing customer and community expectations, managing staff resources (some noted that business as usual services suffered as staff were diverted to emergency operations, others noted that crisis events at holidays periods caused challenges due to staff being on leave), and a lack of understanding of the severity of the event.

Table 11 Major risks that could lead to crises in BOPLG organisations

Hazard / Risk	Total	Electricity, telecos, gas and fuel – generation and retail	Electricity, telecos and gas - networks	Roads, Rail, Port	Council
Loss of critical services	50%	45%	71%	38%	55%
Reputation damage	44%	55%	14%	75%	32%
Earthquake	43%	22%	71%	44%	51%
Severe weather	42%	29%	71%	50%	44%
Regulatory changes	37%	35%	86%	25%	39%
Flooding	37%	4%	14%	34%	55%
Major accident	29%	69%	29%	38%	7%
Staffing issues	27%	22%	0%	22%	33%
Financial Crisis	25%	29%	29%	38%	19%
Tsunami	24%	4%	29%	28%	32%
Pandemic	18%	22%	0%	6%	21%
Volcanic activity	18%	10%	29%	16%	22%
Information security breach	18%	29%	0%	16%	14%
Landslides	13%	4%	14%	25%	13%
Technology change	11%	10%	0%	13%	12%
Contamination	11%	18%	0%	0%	11%
Fire	9%	14%	0%	0%	9%
Drought	8%	14%	0%	0%	8%
Litigation	6%	4%	0%	9%	7%
Other	6%	6%	29%	3%	6%
Failure of key supplier	6%	10%	14%	9%	2%
Loss of key customer	5%	12%	0%	6%	1%
Climate change	4%	4%	0%	3%	4%
Fraud	3%	0%	0%	3%	5%
Terrorism	2%	4%	0%	0%	1%
<p>The top risks (scoring over 30%) for each group are highlighted yellow.</p> <p>Risks selected by over 60% of respondents are highlighted orange.</p>					

Table 12 Recent crises experiences (as described by all staff)

Level of disruption	Percent agreeing with this statement
It definitely challenged us and was very disruptive	15%
It definitely challenged us and was moderately disruptive	33%
It challenged us but was not overly disruptive	37%
We dealt with it as part of business as usual	15%

3.7 Staff / human resources

Staff are a crucial part of any organisation. In general, the survey results show that BOPLG organisations take staff engagement seriously with 97% of organisations (all but one) indicating that they carry out staff engagement surveys. Results of staff satisfaction surveys are also very positive. As summarised in Table 13, all senior managers reported staff satisfaction scores as satisfactory or better.

Table 13 Staff satisfaction survey scores as rated by senior managers

Staff satisfaction survey score	Percent
Very low	0%
Low	0%
Satisfactory	40%
High	47%
Very high	10%

Organisations were also asked about staff turn-over rates. As shown in Table 14, BOPLG organisations have reasonably low staff turnover rates. On average in New Zealand, staff turnover rates are typically around 18%, (15% in electricity and energy sector and 12% in the local government sector) (HRINZ, 2013). Low staff turnover rates support the good results reported from staff satisfaction surveys.

Table 14 Annual staff turnover rates

Annual staff turnover	Percent
0-5%	26.7%
6-10%	30%
11-20%	16.7%
Don't know	26.7%

Despite the good staff satisfaction ratings and low staff turnover, it is important to note that on average senior managers scored their organisational resilience 16% higher than other staff members. This disconnect is common within many organisations and can be detrimental from a resilience perspective as it can indicate a lack of communication and involvement of staff; it is important for organisations to consciously include staff in all resilience development initiatives.

4 Summary and recommendations

4.1 Utility summary

4.1.1 *Electricity, telecommunications, gas and fuel – generation and retail*

This utility group had a good response rate. The group includes a wide range of organisation types but, given the low spread of overall resilience scores (Figure 4) this does not appear to have affected the results. However, it is interesting to note the significant difference between senior manager responses and whole of organisation responses, which indicates a disconnect between staff and senior management.

Electricity, telecommunications, gas and fuel generation and retailers performed well in terms of organisation culture: in particular, decision-making and leadership. This is a strength both during business-as-usual and crises. Strong leadership is invaluable when trying to develop a culture of resilience and reducing the gap between staff and senior manager's views on the organisation. Organisations in this group should use the leadership teams' credibility to engage staff in resilience building exercises.

There is room for improvement in terms of networking for these organisations, although leveraging knowledge scored highly. Networking is particularly important when you consider the dependencies of this utility group. There is a strong dependence in this group, not surprisingly, on electricity, telecommunications and gas network providers. Retailers and generators depend on the network infrastructure to distribute their products to customers. There is also a strong dependence on organisations that provide roads and fuel. Thus, it is important to collectively, through effective partnerships, develop resilience with, and within, all these organisations.

Stress testing plans is a weakness of this group. As this is a common weakness across the utility groups, ways to improve this are suggested in Section 4.3.3.

Electricity, telecommunications, gas and fuel – generation and retail

- *High scores for leadership can be leveraged to engage staff in resilience building exercises.*
- *Leveraging knowledge scored highly and this strength can be used to create improvements in the weaker areas of networking.*

4.1.2 Electricity, telecommunications and gas – networks

As noted in Section 3.2, this utility group is the most resilient overall (compared to the other utility groups), with particular strengths in planning strategies. It is likely that the reported results for this group are somewhat higher than reality given the very low proportion of staff (compared to senior managers) that responded to the survey. It is worth these organisations reflecting on why so few staff completed the survey as it may indicate a potential lack of engagement of staff in resilience, or could be a result of a misperception that resilience is the preserve of senior management.

Whilst this group scored very well, the good results achieved do not mean that there is no improvement to be made! Resilience is a ‘business stock’ that continually needs to be built-up, maintained and evaluated. When crises are faced, resilience can be eroded and time and effort will be needed to build up organisational resilience again.

In addition to maintaining the resilience of this utility group, it is important to use the strengths of this group to support other lifeline utilities in BOPLG. Section 3.4 demonstrated how interdependent the utility groups are. All organisations within BOPLG must work together to collectively improve their resilience and therefore the resilience of the region. Electricity, telecommunications and gas network providers especially need to work closely with organisations responsible for roading and fuel, as this was identified as an area of high dependence.

Stress testing plans is a weakness of this group. As this is a common weakness across the utility groups, ways to improve this are suggested in Section 4.3.3.

Electricity, telecommunications, gas - networks

- *High resilience scores within this group, particularly in terms of planning.*
- *Low staff participation rates in the survey indicate that staff engagement could be improved and a culture of resilience needs to be propagated within these organisations.*
- *This group needs to use its skills to support other members of the BOPLG, especially organisations responsible for roading and fuel, as this was identified as a high dependence area.*

4.1.3 Road, rail and port

Road, rail and port organisations scored well in terms of the Culture attribute. In particular, staff engagement and leadership were seen as effective within this group. As with electricity, telecommunications, gas and fuel generators and retailers, these attributes are very useful for developing other areas of resilience. Well led and engaged staff will be willing to participate in resilience development activities. This is a real advantage for building resilience.

Road, rail and port organisations also scored reasonably well in the networking attribute: in particular, effective partnerships and leveraging knowledge. Again this is a strength that can be leveraged off to improve resilience. For example, you can work with your partners to share strategies to improve resilience.

Despite proactive posture being a strong indicator, overall this utility group scored lowest in the change readiness attribute. Many other utility providers depend on road, rail and port. In particular electricity, telecommunications, fuel and gas utilities rely on roads to deliver their services. In addition, road, rail and port organisations identified a strong dependence on electricity and telecommunications but very low levels of preparedness for disruption to these services. So it is imperative that road, rail and port organisations work to improve their change readiness so that they are ready to respond, immediately and efficiently, to crises.

Breaking silos is a weakness of this group. As this is a common weakness across the utility groups, ways to improve this are suggested in Section 4.3.2.

Road, rail and port opportunities

- *Staff engagement and leadership were effective within this group and this is a real advantage for building resilience. Well-led and engaged staff will be willing to participate in resilience development activities.*
- *The networking attributes of effective partnerships and leveraging knowledge were also strong. Use this strength to engage partners to share resilience strategies.*
- *This group scored least well in terms of their Change Readiness. A collaborative effort with other utility groups (like electricity, telecommunications, fuel and gas utilities) that depend heavily on transportation networks is recommended to improve this.*

4.1.4 Council (including three waters)

Councils had a really good response rate to the survey. The responses incorporated a wide range of divisions (three waters, corporate, finance, hazards management, etc) and consequently there was a wide range in resilience scores (see Figure 4). On average, council organisations scored highest on the Culture and Leadership attribute. As noted for other utility groups, this is a very positive sign as this effective culture and leadership can be used to promote resilience ideas throughout the organisation as well as engagement in resilience development activities.

Councils also scored well in effective partnerships (network attribute) and planning strategies (change ready attribute). Again both these strengths offer opportunities for improving resilience. First, Councils could engage with their partners in joint resilience building activities. Joining with other organisations encourages cross pollination of ideas and creative solution building. Second, planning strengths can be used to integrate resilience concepts into emergency plans and exercises and to develop resilience building frameworks.

As shown in Section 3.4, Councils rely on a number of utility services for successful operation. Councils have done some preparation for disruption to these services during a crisis but it should be noted that there is a high dependence and low preparedness noted for disruption to data networks and phone networks. This is an area for improvement.

Breaking silos is a weakness of this group. As this is a common weakness across the utility groups, ways to improve this are suggested in Section 4.3.2.

Council opportunities

- *High scores in the Culture and Leadership attribute can be leveraged to promote resilience ideas throughout organisations as well as engagement in resilience development activities.*
- *Strong scores in the effective partnership and planning strategy indicators can be leveraged in resilience building activities with other organisations. This encourages cross pollination of ideas and creative solution building*

4.2 BOPLG overall strengths

Overall the greatest resilience strength within the Bay of Plenty Lifelines Group is effective partnerships. This is great news as these existing relationships can be used to collectively grow resilience: through sharing ideas and resources, collaborating on exercises and improving and expanding each other's networks with other organisations. Keep fostering these relationships during business-as-usual and don't be afraid to utilise them during a crisis.

The second strongest resilience indicator was decision making. This is another encouraging result. It is important for organisations to be able to make quick decisions in a crisis. Good decision-making is also valuable during business-as-usual. Organisations should keep working on developing their decision-making, particularly:

- ensuring decision delegations are in place,
- practicing decision-making without adequate information, and
- developing collaborative decisions processes that create future opportunities (rather than just fixing immediate needs).

Lifeline utilities have been developing their planning strategies for many years. This practice has clearly paid dividends as planning strategies is the third strongest resilience indicator for BOPLG. Planning is an

essential tool for utility operators and plans should continue to be developed and improved. Plans can be significantly improved through:

- 1) preparing them collaboratively as a team / organisation / BOPLG;
- 2) writing plans as much as possible around impacts rather than events; and
- 3) by updating plans regularly, particularly when there has been a change within the organisation.

And, of course, the skills that have made planning strategies such a strength can now be utilised to develop and implement a resilience strategy, and building plans to adapt to the unexpected.

With such a wide range of organisations within the BOPLG, the results show there is a diverse range of strengths. This presents a real opportunity for resilience growth and learning within BOPLG.

4.3 Opportunities for improvement

4.3.1 Leveraging knowledge within BOPLG

The results clearly show a range of resilience strengths and weaknesses between organisations and utility groups within BOPLG. As discussed in Section 3.2, each utility group has a different strength. It is likely that some of these utility specific strengths result from the nature of a utility's day-to-day operation. For example, electricity, telecommunications and gas network providers are strong in planning and planning is integral to their business-as-usual operations. Similarly, councils are strong in maintaining effective partnerships because the nature of council operations is to connect with industry and the community. This diversity in strengths within BOPLG is a real opportunity for inter-organisational learning and growth. BOPLG needs to develop ways of sharing and taking advantage of the collective knowledge of the group.

Create a BOPLG action plan

What

BOPLG needs to harness and share the collective knowledge and strengths within the group to improve resilience.

How

- *Focus on one resilience indicator each month. Set up an online forum where organisations can share what they do to improve that aspect of their resilience.*
- *Using the strengths identified in the resilience survey, select one champion organisation, or utility group, for each resilience indicator. Get them to put together a 1-2 page summary (to share with the group) of what they do to enhance that aspect of their resilience. For example, electricity, telecommunications and gas network providers could put together advice on how to successfully plan for crises.*

4.3.2 Breaking silos

Silos are an increasingly common aspect of organisations that can hamper their ability to respond and recover from a crisis. Silos are social, cultural and behavioural barriers that inhibit communication and effective working between people or teams within an organisation. Staff can easily become so focussed on their own tasks and departments that they lose site of the overall organisational goals. Skills are also becoming more specialised and our ability to adapt and step into each other's roles is becoming more challenging. Silos can be devastating in a crisis when unity is most needed to work towards a common goal, and where resources often need to move around as a situation evolves.

As the survey results show, organisations in BOPLG generally need to reduce their silo attitudes – both within and between their organisations. The key to breaking down silos within and between organisations is to encourage communication and movement of people and ideas. This will not only help during crises but will also help with communication, knowledge sharing, creativity and innovative thinking during business-as-usual.

Break down those silos!

What

BOPLG needs to work on reducing silos by encouraging communication and movement of people within and between organisations. This will improve communication, knowledge sharing and innovation and creativity.

How

- *Arrange for employee exchanges – where employees spend, say, a week every six months at another organisation. This can also be done within an organisation, with staff working in other departments for a time.*
- *Prepare and circulate a bi-monthly newsletter summarising BOPLG activities. The newsletter could also include a profile of an organisation or department each issue. Make these newsletters available, not just to those attending BOPLG meeting, but also to staff of all the organisations. This will help to make staff understand their role within the wider context and get to know some of the organisations that they are connected to.*
- *When making working groups for BOPLG activities, ensure that all utility groups are represented, regardless of the nature of the topic. It is valuable to have people bring a different perspective to the table and they may learn things that they can take back to their own utility group.*

For more information on silos in organisations see Resilient Organisations Research Report 2009/01 (Fenwick, Seville, & Brunsdon, 2009).

4.3.3 Stress testing plans

All utility groups would gain from improving their approach to stress testing plans. Stress testing plans is important to both ensure plans are adequate and also to make sure staff are practiced and ready to face a crisis when it occurs. As discussed in Section 3.5, many organisations do not regularly test their plans and there is a distinct difference between how senior managers understand plans compared with staff. Staff's awareness of plan testing, however, was more closely aligned with senior managers than their understanding of the plans themselves, indicating that testing plans increases staff awareness of emergency preparedness more so than the plans themselves. Plans are not particularly valuable if staff do not know how to implement them, or worse, do not even know they exist! Wherever possible, plan testing or crisis exercises should involve as many staff as possible. They should also be engaging and fun to ensure fully committed and attentive participation.

A plan is nothing without practice

What

BOPLG needs to enhance its resilience through improved stress testing of plans. Involve as many staff as possible in every exercise and make exercises fun for maximum staff engagement!

How

- *Develop and run annual BOPLG-wide exercise scenarios based around the top risks identified in the survey: loss of critical services, reputation damage, earthquake, severe weather, regulatory changes, and flooding. Make sure the scenario tests out the lifeline dependencies highlighted in this report.*
- *Develop a series of small 15-30 minute crisis scenarios for the group to share. Choose one scenario each month for everyone to carry out with their respective organisations. Observations from the exercises can then be shared at BOPLG meetings.*
- *When running exercises, arrange for staff to swap roles. You could consider doing this between organisations as well. This will help to break down silos within and between organisations.*
- *Develop a BOP specific emergency training workshop for new staff of all organisations. A half-day workshop could be held twice a year for new staff from all organisations. This could be designed, through interactive scenario based training, to introduce new staff to the region, the hazards, the organisations involved and dependencies between the organisations. This will also help develop situation awareness and effective partnerships.*

Remember that you not only need to stress test the plans themselves but you also need to allow staff to practice their preparedness.

4.3.4 Lifeline CDEM preparedness

Overall the responses to the lifeline specific questions were positive and showed good engagement in CDEM activities. Based on the average response rate, it appears that organisations first and foremost are engaged with CDEM coordination and planning (both pre and post-event). It is not surprising to see this given the strength in fostering effective partnerships that BOPLG organisations have. Next, staff mostly agreed that they had the ability to run 24/7 operations. There was an average agreement of 75% to this statement. This, however, should be read in parallel with the response to the question on relocation feasibility. Over 10% of respondent organisations did not appear to have a clear strategy for relocating after a crisis (choosing an option that explained the difficulty of relocating, rather than responses that described a particular chosen strategy). Ideally lifeline utilities should have relocation sites already selected. Those organisations that do not have these arrangements in place should consider adding it to their plans.

Plan for the need to relocate

What

All BOPLG members need to ensure they have a clear relocation strategy in their emergency plans.

How

Individual organisations need to:

- *Prepare alternative sites locations / arrangements*
- *Prepare remote operation options (e.g. working from home)*
- *Prepare how phone and ICT requirements will be managed during relocation.*
- *Carry out hazard assessments on all current and possible alternative operation locations.*
- *Get your team together and put together a list of essential items / requirements for an emergency operation site. Have this ready in a crisis in case your relocations plans fall through!*

BOPLG should:

- *Set up a database that holds all alternative working arrangement information.*
- *Hold a workshop to discuss opportunities for site and resource sharing.*

Statements that respondents agreed least with were: having a clear restoration hierarchy, staff understanding their emergency roles, and having clear rapid impact assessment procedures in place. In light of this, BOPLG organisations should consider utilising their planning skills and reviewing their plans to ensure rapid impact assessment and service restoration hierarchies are in place. And they need to stress test their plans and staff so they know what and how to act in a crisis.

Develop rapid impact assessment protocols and service restoration hierarchies

What

BOPLG members should review their emergency arrangements around restoration hierarchies and rapid impact assessment procedures.

How

Individual organisations need to:

- *Get teams together over lunch one week and brainstorm possible approaches to service restoration and rapid impact assessment.*
- *The following week, give your team a crisis scenario to test these approaches. Divide your team in groups and challenge them to see who can come up with the most effective restoration strategy.*
- *Following a crisis event, hold a team debrief and review existing emergency arrangements and see whether procedures need to be revised.*

BOPLG should:

- *Develop a project to develop a combined rapid impact assessment procedure. A process to collect and efficiently share impact information following a disaster event.*
- *Run through a group wide crisis scenario exercise where service restoration hierarchies can be tested for impact on other lifelines group members.*

Test all procedures in crisis exercises and assess how well staff understand their roles.

It is really important to note again the disparity between the senior manager and staff responses to the lifeline CDEM responsibility questions, as well as all other questions in the survey. Senior managers responded significantly higher to most of these questions than staff did. This highlights the need for senior managers to always do a 'reality check' on their assumptions. Senior managers need to engage with staff regularly to check familiarity and understanding of essential emergency arrangements, procedures and plans.

Get staff better engaged with emergency preparedness

What

BOPLG senior managers need to improve communication with staff members around emergency preparedness. Senior managers need to actively seek and assess staff understanding of emergency preparedness and ensure that there is a consistent understanding across the organization.

How

Individual organisations could:

- *Observe staff actions during crisis exercises*
- *Ask staff what could be improved about current emergency plans*
- *Send out a digi-poll every Friday asking staff to vote on the most appropriate response to a short crisis scenario.*
- *Put a mini-quiz in the staff newsletter each month. Give a prize for the winner and explain the answer the following week.*

BOPLG could:

- *Include staff participation in as many BOPLG activities as possible. For example, use web-based forums to elicit staff ideas, video BOPLG meetings and make them available to all staff, involve staff in crisis exercises, circulate newsletters containing BOPLG activities, and BOPLG run new staff inductions.*

Keep exercises fun, engaging and regular! A bit of competition often encourages participation too!

4.3.5 Lifeline dependencies

Last, BOPLG members need to take more time to consider the dependency between their services. As discussed in Section 3.4, for many utility groups, there are low levels of preparedness for services that are critical to their operation. In particular, there is a need for enhanced preparedness for telecommunications, electricity and road disruptions. BOPLG should work together to develop strategies to minimize disruption due to lifeline service outages. Strategies should focus on both what individual utility operators can do to mitigate disruption to other lifelines (e.g. by changing their service restoration hierarchy), as well as developing alternative arrangements that can bridge the gap before full service is restored (e.g. back-up generators, satellite phones). Leverage off each other's technical knowledge for this.

Target critical interdependencies where there is insufficient planning

What

BOPLG members need to collaboratively identify and mitigate the effects of potential disruption to each other's services.

How

- *Develop a project that further investigates lifelines inter-dependencies and strategies for improving preparedness against lifeline disruption.*

6 Conclusions and future directions

BOPLG have taken an important step in identifying organisational resilience as an essential growth area for the group. Generally, the organisations are showing good resilience. Within the group there are a diverse range of skills and strengths that can be leveraged to improve collective resilience. There are also several areas that need improvement on: in particular, trying to break down silos within and between organisations to allow for more effective communication and creativity; and improving stress testing of plans, to ensure plans work effectively and staff are aware of and are prepared for their emergency roles. Overall the greatest resilience strength the BOPLG identified in the study is effective partnerships. This strength, together with strong decision making and planning capabilities, can be leveraged to build a resilience strategy for the group as a whole.

The most important thing for BOPLG to do from here is to keep the momentum going. Resilience is not static. It is a stock that can either erode or build over time; it requires constant care and attention. Use the support, encouragement and skills of the group to individually and collectively grow resilience.

Keep growing your resilience!

- *Make resilience growth a key strategic mission for BOPLG.*
- *Develop a plan of action. As a group, focus attention on putting at least two of the recommendations in this report into action.*
- *Challenge each organisation to initiate five different resilience growth activities within their organisation over the next year.*
- *Hold each other to account! Have a resilience 'brag-board' on the BOPLG website where members can briefly describe the latest resilience initiatives they have led.*
- *Encourage group members to go on to better understand and track their own resilience; by repeating use of the Benchmark Resilience Tool on an annual basis. For national organisations, consider undertaking using Benchmark Resilience Tool for your whole organisation.*
- *Consider a deeper analysis of individual organisations, or the group as a whole, through workshops or interviews and further data analysis.*
- *For the BOPLG, book in a repeat benchmark resilience project again in 2 years to see how much progress has been made.*

References

- Fenwick, T., Seville, E., & Brunsdon, D. (2009). Reducing the impact of organisational silos on resilience *Resilient Organisations Research Report*. Christchurch: Resilient Organisations.
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Appendix A – Survey



Resilient Organisations Resilience Benchmark Tool

Senior Manager Version (Sections 1, 2 and 3)

Staff Version (Sections 1 and 2)

Introduction

Resilience is the ability of an organisation to survive a crisis and thrive in a world of uncertainty.

This Resilience Benchmark Tool is designed to help measure the resilience of an organisation, to monitor progress over time, and to compare resilience strengths and weaknesses against other organisations within your sector or of a similar size.

This questionnaire has been developed by the Resilient Organisations Research Programme at the University of Canterbury in New Zealand. The results do require careful analysis for correct interpretation. This questionnaire is therefore not to be used without prior permission.

The survey will take approximately 20-30 minutes to complete.

If you would like to use this Tool with your organisation or to find out more information, please contact Erica Seville or John Vargo (Co-leaders of the Resilient Organisations Research Programme) at erica.seville@rsrc.co.nz or john.vargo@canterbury.ac.nz.

Ethics

Please read the following note before completing the questionnaire.

You are invited to participate in the benchmarking resilience project by completing the following questionnaire. The aim of the project is to evaluate the resilience of your organisation.

The questionnaire is anonymous, and you and your organization will not be identified as a participant without your consent.

You may withdraw your participation, including withdrawal of any information you have provided, within two weeks of submitting the survey. Because it is anonymous, and it will be added to other surveys, it cannot be retrieved after that.

The research team working on this project will be working under University of Canterbury human ethics requirements.

By completing the questionnaire it will be understood that you have consented to participate in the project, and that you consent to publication of the results of the project with the understanding that anonymity will be preserved.

Version: April 2014 including Lifeline specific questions

Instructions

This questionnaire has been divided into three sections. The first section asks some questions about you. The second section asks about characteristics of your organisation that are associated with resilience. The third section asks management questions about your organisation. As many staff as possible from your organisation are asked to complete sections one and two of the survey. The third section is to be answered by only one respondent for the organisation.

It is very important that you provide an answer to every question. However, it's impossible for everyone within an organisation to know everything, so if you don't know an answer, please use the 'Don't Know' option.

Some useful definitions for this survey

What is an organisation?

Throughout this survey the word 'organisation' is used. Depending on where you stand, 'organisation' could describe a small business, a major division or department, an organization at regional level or indeed an entire organization at national or international level. You will get the best results from the survey if you and your staff answer the survey from the same perspective. So, please remember to answer this survey from the perspective agreed with Resilient Organisations before commencing this survey. And please ensure you tell your staff to do the same.

What is a crisis?

Throughout this survey the word 'crisis' is used. This is a generic term, however by way of guidance, consider 'crisis' to mean any non-routine disruption that causes significant impact to the organisation. This may not necessarily mean the loss of life or property, but may stress the organisation and affect its ability to respond and recover from the event. Examples include a power cut, flood, technology change, reputation issue, supply chain failure, earthquake, regulatory change, fire, etc.

Section 1: A little about yourself

1. What is the name of your organisation?

2. Are you?

- Male
- Female

3. What is your age?

- 20 or under
- 21-30
- 31-40
- 41-50
- 51-60
- 61+

4. Which of these levels best describes your position within your organisation? *(please tick one)*

- Senior management
- Middle management
- Supervisor/team leader
- Staff

5. What is your job title?

6. How long have you worked in your industry?

- <1 year
- 1-3 years
- 4-10 years
- 11-20 years
- 21+ years

7. How long have you worked at your organisation?

- <1 year
- 1-3 years
- 4-10 years
- 11-20 years
- 21+ years

Section 2: Resilience Indicators

This section should be completed by all staff. It contains questions about the resilience characteristics of your organisation.

Resilience is the ability of an organisation to survive a crisis and thrive in a world of uncertainty. Resilience consists of three interdependent attributes (1) Leadership and Culture; (2) Networks and (3) Change Ready processes that build Business as Usual (BAU) effectiveness as well as robust and agile response and recovery from crises.

2a: Leadership and Culture

The first part of this section asks about adaptive capacity of the organisation created by its leadership and culture. There are five indicators of organisational resilience that fall under the Leadership and Culture attribute – these are:

- *Leadership*
- *Staff engagement*
- *Situation awareness*
- *Decision making*
- *Innovation and creativity*

If you don't know the answer to any of the questions, please choose the 'Don't Know' answer.

Leadership: Strong crisis leadership to provide good management and decision making during times of crisis, as well as continuous evaluation of strategies and work programs against organisational goals.

8. To what extent do you agree or disagree with the following statements for your organisation?

	Strongly Agree←-----→Strongly Disagree								Don't Know
There would be good leadership from within our organisation if we were struck by a crisis.									
In a crisis, staff accept that management may need to make some decisions with little consultation									
Our managers monitor staff workloads and reduce them when they become excessive									

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Our management think and act strategically to ensure that we are always ahead of the curve									
Management in our organisation lead by example									
Our organisation regularly re-evaluates what it is we are trying to achieve									

Staff Engagement: The engagement and involvement of staff who understand the link between their own work, the organisation's resilience, and its long term success. Staff are empowered and use their skills to solve problems.

9. To what extent do you agree or disagree with the following statements for your organisation?

	Strongly Agree←-----→Strongly Disagree								Don't Know
People in our organisation feel responsible for the organisation's effectiveness									
People in our organisation are committed to working on a problem until it is resolved.									
Our organisation's culture is to be very supportive of staff									
Our organisation has high staff morale									
Staff know what they need to do to respond to a crisis									

Situation Awareness: Staff are encouraged to be vigilant about the organisation, its performance and potential problems. Staff are rewarded for sharing good and bad news about the organisation including early warning signals and these are quickly reported to organisational leaders.

10. To what extent do you agree or disagree with the following statements for your organisation?

Situation Awareness	Strongly Agree←-----→Strongly Disagree								Don't Know
We proactively monitor our industry to have an early warning of emerging issues.									
We learn lessons from the past and make sure those lessons are carried through to the future									
Staff interact often enough to know what's going on in our organisation									
Our managers actively listen for problems									
We are mindful of how the success of one area of our organisation depends on the success of another									
Staff feel able to raise problems with senior management									

11. Think of the overall highest risks that could lead to crisis for your organisation, please tick the top 5 in the list below:

- Financial crisis
- Major accident or fire
- Pandemic (e.g. influenza, bio-security)
- Loss of critical services (e.g. electricity, water, gas, telecommunications)
- Reputation damage
- Fraud
- Regulatory changes
- Failure of a key supplier
- Loss of a key customer
- Staffing issues
- Information security breach
- Technological change

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- Contamination
- Litigation
- Climate Change
- Terrorism
- Flooding
- Bushfire
- Drought (water shortage)
- Severe weather (e.g. storm, tornado)
- Tsunami
- Volcanic activity
- Landslides
- Earthquake

Other _____

Decision Making: Staff have the appropriate authority to make decisions related to their work and authority is clearly delegated to enable a crisis response. Highly skilled staff are involved, or are able to make, decisions where their specific knowledge adds significant value, or where their involvement will aid implementation.

12. To what extent do you agree or disagree with the following statements for your organisation?

Decision Making	Strongly Agree←-----→Strongly Disagree								Don't Know
Should problems occur, staff have direct access to someone with authority to make decisions									
We can make tough decisions quickly									
In our organisation, the most qualified people make decisions, regardless of seniority									

Innovation and Creativity: Staff are encouraged and rewarded for using their knowledge in novel ways to solve new and existing problems, and for utilising innovative and creative approaches to developing solutions.

13. To what extent do you agree or disagree with the following statements for your organisation?

	Strongly Agree←-----→Strongly Disagree								Don't Know
Staff are actively encouraged to challenge and develop themselves through their work									
We are known for our ability to use knowledge in novel ways									
Staff are rewarded for “thinking outside of the box”									

2b: Networks

The second part of this section asks about the internal and external relationships fostered and developed by your organisation that it can leverage when needed. There are four indicators of organisational resilience that fall under the Network attribute – these are:

- *Effective partnerships*
- *Leveraging knowledge*
- *Breaking silos*
- *Internal resources*

If you don't know the answer to any of the questions, please choose the 'Don't Know' answer.

Effective Partnerships: An understanding of the relationships and resources the organisation might need to access from other organisations during a crisis, and planning and management to ensure this access.

14. To what extent do you agree or disagree with the following statements for your organisation?

	Strongly Agree←-----→Strongly Disagree								Don't Know
In a crisis, we have agreements with other organisations to access resources from them									
We have planned for what support we could provide to the community in a crisis									
We build relationships with others we might have to work with in a crisis									
We understand how we are connected to other organisations and actively manage those links									
We understand how Government actions would affect our ability to respond in a crisis									

Leveraging Knowledge: Critical information is stored in a number of formats and locations and staff have access to expert opinions when needed. Roles are shared and staff are trained so that someone will always be able to fill key roles.

15. To what extent do you agree or disagree with the following statements for your organisation?

	Strongly Agree←-----→Strongly Disagree								Don't Know
Staff have the information and knowledge they need to respond to unexpected problems									
If something out of the ordinary happens, staff know who has the expertise to respond									

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Critical information is available by different means and from different locations									
If key people were unavailable, there are always others who could fill their role									
We readily obtain expert assistance when there's a problem									

Breaking Silos: Minimisation of divisive social, cultural and behavioural barriers, which are most often manifested as communication barriers creating disjointed, disconnected and detrimental ways of working.

16. To what extent do you agree or disagree with the following statements for your organisation?

	Strongly Agree←-----→Strongly Disagree								Don't Know
Staff are encouraged to move between different departments or try different roles to gain experience									
There is a sense of teamwork and camaraderie in our organisation									
There are few barriers stopping us from working well with other organisations									
We work with others regardless of departmental or organisational boundaries, to get the job done									

Internal Resources: The management and mobilisation of the organisation's resources to ensure its ability to operate during business as usual, as well as being able to provide the extra capacity required during a crisis.

17. To what extent do you agree or disagree with the following statements for your organisation?

	Strongly Agree←-----→Strongly Disagree								Don't Know
We have sufficient internal resources to operate successfully during business as usual									
Our organisation maintains sufficient resources to absorb unexpected change									
When a problem occurs, it is easier to get approval for additional resources to get the job done									

2c: Change Ready

The last part of this section asks about the planning undertaken and direction established to enable your organisation to be change ready. There are four indicators of organisational resilience that fall under the Change Ready attribute– these are:

- *Unity of Purpose*
- *Proactive Posture*
- *Planning Strategies*
- *Stress Testing Plans*

If you don't know the answer to any of the questions, please choose the 'Don't Know' answer.

Unity of Purpose: An organisation wide awareness of what the organisation's priorities would be following a crisis, clearly defined at the organisation level, as well as an understanding of the organisation's minimum operating requirements.

18. To what extent do you agree or disagree with the following statements for your organisation?

	Strongly Agree←-----→Strongly Disagree								Don't Know
We have clearly defined priorities for what is important during and after a crisis									
Our priorities for recovery would be sufficient to provide direction for staff in a crisis									
We understand the minimum level of resources our organisation needs to operate									
We are mindful of how a crisis in our organisation would impact others									
Our organisation consistently demonstrates commitment to its values									

Proactive Posture: A strategic and behavioural readiness to respond to early warning signals of change in the organisation's internal and external environment before they escalate into crisis.

19. To what extent do you agree or disagree with the following statements for your organisation?

	Strongly Agree←-----→Strongly Disagree								Don't Know
We have a focus on being able to respond to the unexpected									
We are able to collaborate with others in our industry to manage unexpected challenges									

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We are able to shift rapidly from business-as-usual to respond to crises									
Whenever our organisation suffers a close call, we use it for self-evaluation rather than confirmation of our success									
We are regarded as an active participant in industry and sector groups									
Our organisation readily responds to changes in our business environment									
In a crisis we seek opportunities for our organisation									
We tend to be optimistic and find positives from most situations									

Planning Strategies: The development and evaluation of plans and strategies to manage vulnerabilities in relation to the business environment and its stakeholders.

20. To what extent do you agree or disagree with the following statements for your organisation?

	Strongly Agree←-----→Strongly Disagree								Don't Know
Our organisation plans for the medium- and h-term									
We plan our strategy carefully before taking action									
Given how others depend on us, the way we plan for the unexpected is appropriate.									
We are mindful of how a crisis could affect us									

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We actively plan with our suppliers how to manage disruptions									
We actively plan with our customers how to manage disruptions									
We actively plan how to support our staff during times of crisis									
We have a good understanding of how an event impacting the community may impact our ability to respond									

21. Our organisation currently has people who perform the following roles *(tick all that apply)*

- Risk management,
- Crisis management,
- Emergency management
- Business continuity
- None of these
- Don't Know

22. Our organisation has the following Plans *(tick all that apply)*

- Business Continuity Plan
- Emergency Plan
- Crisis Plan
- None of these
- Don't Know
- Other type of Plan (please describe)

23. Are your organisation's plans of a sufficient standard to be useful in an emergency? (Please tick one)

- Yes
- Don't know
- No (Please say why)

Stress Testing Plans: The participation of staff in simulations or scenarios designed to practice response arrangements and validate plans.

24. How regularly does your organisation rehearse and test its plans?

	N/A	Twice a year	Annually	Every 2 nd year	Hardly ever	Don't Know
Business Continuity Plan						
Emergency Plan						
Crisis Plan						
Other type of Plan						

25. To what extent do you agree or disagree with the following statements for your organisation?

	Strongly Agree←-----→Strongly Disagree								Don't Know
Our organisation is committed to practicing and testing its emergency plans to ensure they are effective									
Staff can take time from their day to day roles to practice how to respond in a crisis									

26. How long could your organisation continue functioning if normal supply to the following infrastructure services were disrupted?

	Could not function	Hours	Days	Weeks	Months
Water supply					
Sewage					
Electricity					
Gas					
Phone networks (cell and landline)					
Data networks					
Road network					
Rail					
Airport					
Port					
Fuel					

27. Our organisation has done sufficient planning for how disruption to the following infrastructure might affect us:

	Strongly Agree←-----→Strongly Disagree								Don't Know
Water supply									
Sewage									
Electricity									
Gas									
Phone networks (cell and landline)									
Data networks									
Road network									
Rail									

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Airport									
Port									
Fuel									

Crisis Experience:

Remember: a crisis is any non-routine disruption that causes significant impact to the organisation. This may not necessarily mean the loss of life or property, but may stress the organisation and affect its ability to respond and recover from the event. Examples include a power cut, flood, technology change, reputation issue, supply chain failure, earthquake, regulatory change, fire, etc.

28. Has your organisation experienced a crisis or emergency in the last 5 years?

- Yes,
- No,
- Don't know

In what year did the crisis occur?

On the scale shown please rate, how severe your organisation's most recent crisis was for your organisation.

- We dealt with it as part of business-as-usual,
- It challenged us but was not overly disruptive,
- It definitely challenged us and was moderately disruptive,
- It definitely challenged us and was very disruptive,
- It could have shut us down permanently,
- Don't know

Please briefly describe what the crisis was, how long it lasted for and what the impact was on your organisation.

--

Lifeline specific questions

29. To what extent do you agree or disagree with the following statements for your organisation?

	Strongly Agree←-----→Strongly Disagree								Don't Know
We actively participate in CDEM coordination and emergency planning.									
Staff understand their role in an emergency and have undergone emergency response training.									
We have a clear rapid impact assessment procedure in place.									
We have the ability, processes and facilities to respond to a 24/7 emergency operation.									
We have a clear process for coordinating with CDEM during an emergency.									
We have a clear service restoration hierarchy, including restoration policies that enable continuance of supply to CDEM critical facilities.									

Section 3: Organisation Demographics and Performance (senior manager only)

This section should be answered by one respondent per organisation. It contains questions on the organisation's demographics and performance. These questions provide a reflection of whether resilience increases with day-to-day business performance and helps us to develop strategies which deliver benefits for business as usual as well as crisis situations.

30. What is the main activity of your organisation?

- Agriculture, Forestry or Fishing
- Mining
- Manufacturing
- Electricity, Gas, Water & Waste Services
- Construction
- Wholesale Trade
- Retail Trade
- Accommodation and Food Services
- Transport, Postal and Warehousing
- Information, Media and Telecommunications
- Financial and Insurance Services
- Rental, Hiring and Real Estate Services
- Professional, Scientific and Technical Services
- Administrative and Support Services
- Public Administration and Safety
- Education and Training
- Health Care and Social Assistance
- Arts and Recreation Services
- Other (please specify)

31. Which classification best describes your organisation? *(Please tick one)*

- Community Trusts
- Individual Proprietorship / Self-Employed
- Partnership
- Privately Held Limited Liability Company (Non Co-op)
- Publically Listed Limited Liability Company (Non Co-op)
- Co-operative company
- Joint venture or consortium
- Branch of Company Incorporated Overseas

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- Government Owned Trading Entity
- Central Government
- Local Authority Trading Enterprise (LATE)
- Local Government
- Incorporated or Unincorporated Society and Association
- Charitable Trusts
- Trust /Estate
- Consulate and Foreign Embassy
- Other (please specify)

32. Does your organisation have external directors on its governing board?

- Yes
- No
- N/A

33. Please estimate the number of employees working in your organisation (including yourself if you are an owner/operator)

Number of full time employees

Number of part time employees

34. How many years has your organisation been operating?

- 0-3 years
- 4-9 years
- 10-49 years
- Over 50 years

35. How many sites or locations does your organisation operate from? (Locations where staff are based)(Please answer in figures e.g. 12)

36. What is your organisation's average annual staff turnover over the last 5 years?

- 0 – 5%
- 6 – 10%
- 11 – 20%
- 21 – 40%
- 41% +
- Don't Know

37. Does your organisation have back-up Information Technology (IT) facilities?

- No
- Yes (please describe)

38. How feasible is it to relocate parts or all of your organisation's operations? *(tick all that apply)*

- The majority of my staff can work from home
- It is relatively easy for us to set up in a new location
- We have multiple sites we can operate from
- There are significant health/safety and regulation constraints affecting the locations we can operate from
- The equipment is difficult to source, relocate and replace
- Our business is quite location specific, moving is not an option
- We could potentially site-share with another organisation
- Other (please describe)

39. How would you rate your organisation's cash flow?

- Excellent
- Good
- Satisfactory
- Poor
- Very Poor

40. Has your organisation used a staff satisfaction survey in the last two years?

- Yes
- No
- Don't know

41. How would you rate your organisation's most recent staff satisfaction score?

- Very high
- High
- Satisfactory
- Low
- Very Low
- Don't know

42. How would you describe your organisation's current level of debt?

- Very high debt
- High debt
- Moderate debt
- Minimal / No debt
- Don't know

43. How would you describe your organisation's current growth trajectory?

- Growing rapidly
- Growing slowly
- Neither growing nor declining
- Slowly declining
- Rapidly declining
- Don't know

44. Which of the following best describes your organisation?

- For-profit (*answer question 45 and 46*)
- Not-for-profit (*skip question 45, answer question 46*)

45. How would you rate your organisation's profitability?

- Highly profitable
- Moderately profitable
- Breaking even
- Unprofitable
- Don't know

46. How would you rate your organisation's surplus:

- High surplus
- Low surplus

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- No surplus
- Low deficit
- High deficit
- Don't know

Appendix B – Stress testing plan ideas

(generated at the Bay of Plenty / Waikato Lifelines Groups Forum 21 August 2014)

1. Online multi-agency and public scenario
2. Prioritise work tools and take away one or two key tools for a day
3. Get an external agent to check your risk register
4. Run a scenario and take away managers / experts
5. Establish an emergency operations centre in any meeting room / location
6. Deny access to particular areas
7. Set councillors up to interfere with an exercise
8. Turn power off for an hour
9. During a scenario exercise create a low level of chaos using the PA system
10. Involve suppliers in exercises
11. Involve customers in exercises
12. Run a compulsory no notice survey – what would you do in this event?
13. Run an exercise as a social event
14. Create common scenarios and share with lifelines group / other organisations
15. Run a no notice scenario
16. Run “what if?” scenarios during a fire drill “What if you can’t go back in for 2 days – what do you have with you?” “What if your key supplier is folded, what would you do?”
17. Rotate responsibilities for scenarios
18. Hold debriefs after exercises
19. Get everybody involved
20. Research what other organisations do and borrow their ideas
21. Give different teams the same scenario and observe different responses. Make it a friendly competition!
22. Simulate an event of a dungeon master
23. Create a real life event!
24. Hold a ‘what would you do if?’ competition
25. Create scenarios with family impacts
26. Collaborate with others for exercises
27. Remove technology in your exercises
28. Overblow a real event
29. Simulate a nationwide technology failure
30. Run an exercise where English is the second language
31. Exercise with non-engineering organisations
32. Include mock media in exercises
33. Use a volcanic eruption event
34. Have an exercise where communication is lost
35. Take away all leaders and experts
36. Test an epidemic event
37. Give your plan to another organisation and get them to stress test it.

- 38. Invade another organisation
- 39. Give the same scenario to civil defence staff and to new staff and observe the different responses
- 40. Involve the community in scenario
- 41. Have a scenario that effects the public
- 42. Take out emergency services
- 43. Stop payroll for 2 weeks

Appendix C – Project summary handout

Benchmark Resilience Project 2014

Project Summary

Project rationale

Bay of Plenty Lifelines Group (BOPLG) identified that lifeline operators had traditionally focussed on the resilience of built assets and focussed less on organisational resilience. The aim of this project was to engage its members in a project to collectively improve the resilience of their organisations.

What is resilience?

Resilience is the ability to survive a crisis and thrive in a world of uncertainty.

Project approach

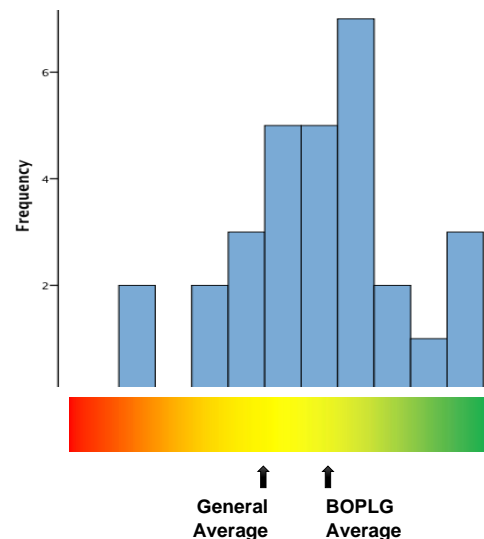
BOPLG used the Resilient Organisations Benchmark Resilience Tool to measure resilience. The online tool asks a series of questions based on 13 indicators of resilience – as shown in the diagram below.

Resilience Indicators



Resilience Scores

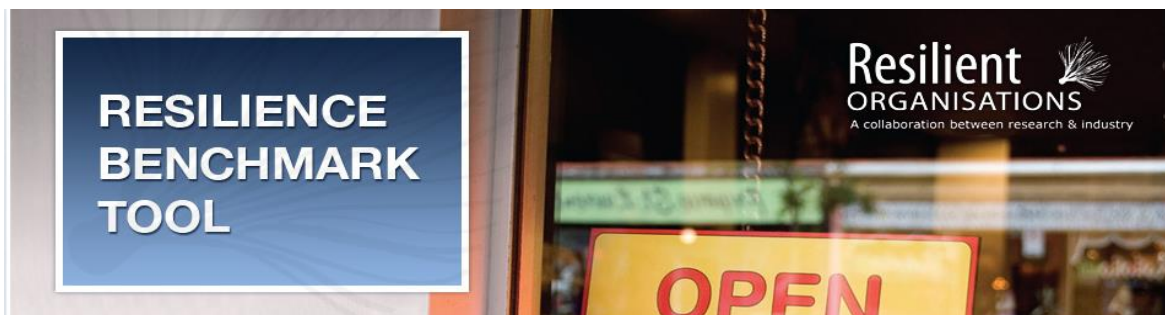
All organisations that participated received a report with their resilience score and strengths, and a suggested action plan for addressing resilience weaknesses. Organisations can use this graph to determine where they scored relative to other organisations that participated. The blue bars represent the number of organisations achieving each score.

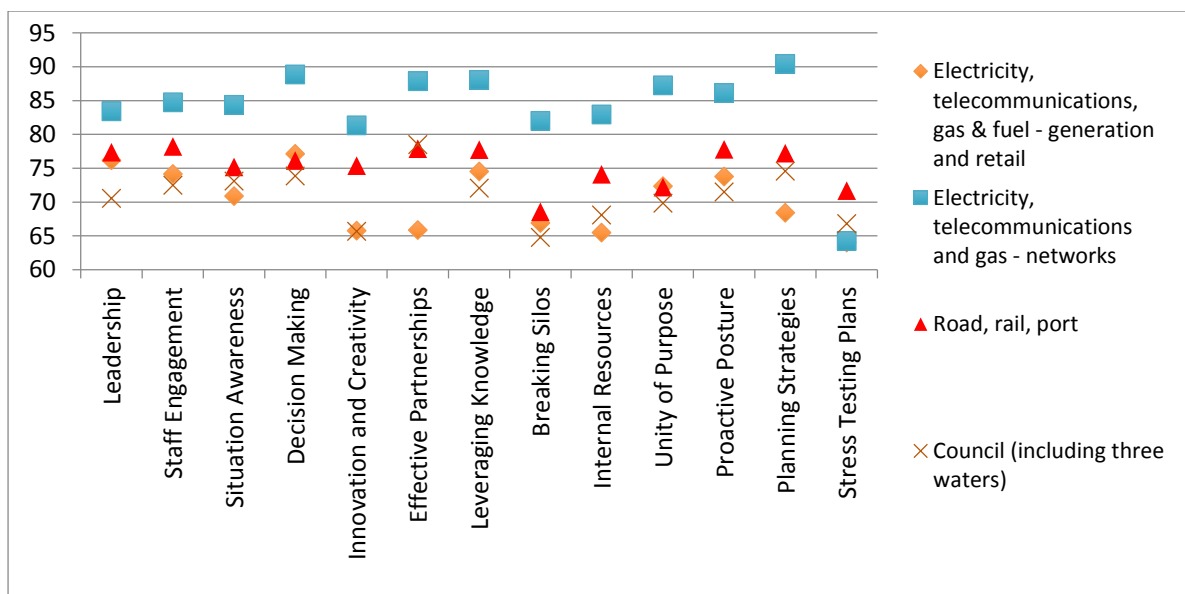


Resilience Strengths

Overall BOPLG scored highly in **effective partnerships, planning strategies** and **decision making**.

BOPLG's weakest resilience attributes were **stress testing plans** and **breaking silos**.





Note that electricity, telecommunications and gas network provider results were likely higher than reality due to a low staff participation rate.

Utility group performance

The participating organisations were divided into four utility group types for the analysis. Each utility showed different strengths and weaknesses.

Utility group	Strengths	Weaknesses
Electricity, telecos, gas & fuel – generation and retail	Decision making	Stress testing plans
Electricity, telecos & gas – networks	Planning strategies	Stress testing plans
Road, rail, port	Staff engagement	Breaking silos
Council (including three waters)	Effective partnerships	Breaking silos

Lifelines preparedness

Organisations showed relatively high levels of emergency preparedness and several areas for improvement were identified:

- Rapid impact assessment procedures
- Staffing understanding and training in emergency response
- Service restoration hierarchies
- Relocation planning
- Management of lifelines interdependencies

Keep your resilience growing!

Resilience isn't static – it builds and erodes over time. So keep working at it!

- Make resilience growth a key strategic mission for BOPLG.
- Create a BOPLG Resilience Action Plan.
- Challenge & hold each other to account.
- Collectively use your strengths to improve your weaknesses.
- Encourage group members to understand and track their own resilience.
- Keep your greatest asset – your staff - engaged.
- For national organisations, consider undertaking using Benchmark Resilience Tool for your whole organisation.
- Consider a deeper analysis of individual organisations, or the group as a whole, through workshops or interviews.
- Repeat this BOPLG benchmark resilience project in 2 years.
- **Practice Resilience as a TEAM sport.**

If you are interested in looking further into your organisation's resilience then contact *Resilience Organisations* to discuss options.

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